The Builder

A JOURNAL FOR THE

Architect, Engineer, Operative & Artist.

VOL. XIX.—No. 961. | JULY 6, 1861. | PRICE FOURPENCE. *Stamped, 5d.*

ILLUSTRATIONS.

New Bridge over the Rhine at Kehl 463
The Rhine Bridge at Kehl.—Section of Caisson for Construction of Piers 462

CONTENTS.

A View of Kingston-upon-Hull 453
The Present and Past Boundary of the River Thames at London 455
What Edinburgh says of Edinburgh 457
Sale of the India House, Leadenhall-street 457
Voluntary Architectural Examination: Royal Institute of British Architects 457
The Proposed Embankment of the Thames 458
Westminster Improvements 459
Dinner to Members of the Royal Institute of British Architects 459
Architectural Association 460
Liverpool Architectural Society 460
The Merchant Seamen's Orphan Asylum, Snaresbrook 460
The Western College, Plymouth 460
New Street Messengers at Berlin 461
The New Bridge over the Rhine at Kehl 461
Originality of Style 465
Norwich Castle and Cathedral 467
Excavations at Cyrene 467
Ozone 467
The Labour Question 467
Railway Bridges 468
Monumental 468
Church-building News 468
School-building News 468
Stained Glass 469
Provincial News 469
Improvement in London Streets 469
The Acoustic Properties of Rooms 469
The Extinguishment of Fires 470
The Great Fire in Tooley street 470
A Pretty Specimen of Dictation 470
The Conversazione at the Institute 470
Organization for Working Men 470
Books received: Morris's House for the Suburbs (Simpkin & Co.); Variorum 470
Miscellanea 471

WILL CLOSE ON THE 27th INSTANT.

SOCIETY of PAINTERS in WATER COLOURS.—The FIFTY-SEVENTH ANNUAL EXHIBITION, at their Gallery, 5, Pall-mall East (Close to the National Gallery), from NINE till DUSK. Admittance, 1s. Catalogue, 6d.
JOSEPH J. JENKINS, Secretary.

THE NEW SOCIETY of PAINTERS in WATER-COLOURS. — THE TWENTY-SEVENTH ANNUAL EXHIBITION IS NOW OPEN. Gallery, 53, Pall-mall West. Admission, 1s.; Catalogues, 6d.; Season Tickets, 5s. JAMES FAHEY.

INTERNATIONAL EXHIBITION, 1862. The TRADES of the UNITED KINGDOM, classified in the Order in which Exhibitors' Productions will be exhibited.—To be had of all Booksellers, and at 454, West Strand, W.C. Price 1s.

THE ARCHITECTURAL MUSEUM,
SOUTH KENSINGTON MUSEUM, W.
Patron, H. R H. THE PRINCE CONSORT.
PRIZES to ARTIST WORKMEN are now offered for—

STONE CARVING	£10	10	0	and	£5	5 0
Also....	5	5	0	,,	3	3 0
MODELLING	3	3	0	,,	2	2 0
WOOD CARVING.....	10	10	0	,,	5	5 0
METAL WORK	10	10	0	,,	6	6 0
Also....	10	10	0	,,	5	5 0
PAINTED GLASS	..	..			5	5 0
COLOURED DECORATION..	5	5	0	,,	3	3 0

PORTIONS of any ACTUAL WORK in progress, Prizes according to merit. EXTRA PRIZES and Ten valuable Illustrated Books will also be added; and all deserving specimens will be sent to the International Exhibition of 1862.—For full particulars, apply, by letter, to the Hon. Secretary, at 13, Stratford-place, W.
A. J. B. BERESFORD HOPE, President.
GEO. GILBERT SCOTT, Treasurer.
JOSEPH CLARKE, Hon. Secretary.

THE SCIENTIFIC and ENGINEERING SCHOOL, at the COLLEGE, CHESTER.—This School is recognized by the Secretary of State for India "as possessing an efficient Class for Civil engineering." Special attention is also given to practical chemistry. Each pupil is provided with a separate sleeping apartment. Application for admission is to be made to the Rev. ARTHUR RIGG, College, Chester.

THE SOUTH LONDON MUSEUM.—By permission of the Privy Council, the Trustees of the National Gallery and the Commissioners of Patents, a CONVERSAZIONE will be held at the South Kensington Museum, on THURSDAY, JULY 11, 1861, from EIGHT till TWELVE. The chair will be taken by the Right Hon. the EARL GRANVILLE, K.G. at HALF-PAST NINE, in the Theatre attached to the Museum. The whole of the Fine Arts collections will be opened, and a superb collection of jewels, diamonds, arms, gems, antique and modern examples of gold and silversmiths' work (many of which were at Ironmongers' Hall), will be exhibited by some of the City Companies, the Aldermen of the City of London, several learned Societies, &c. A band will be in attendance, and Miss HELEN BLISS will kindly officiate at the pianoforte.—Admission by tickets only, single, 5s.; double, to admit a lady and gentleman, or two ladies, 7s. 6d.; or, if purchased prior to JULY 11th, 3s. and 5s.—These may be obtained of all the Reading, Print, and Music Sellers of the metropolis, as per small bills.—By order of Committee,
EDGAR F. BROCK, } Hon. Secretaries.
T. S. DAVIS, }

ROYAL HORTICUTURAL SOCIETY.—The GREAT ROSE SHOW at SOUTH KENSINGTON.—WEDNESDAY next, JULY 10th. Tickets, 5s.; on the day, 7s. 6d. can be had of the principal Music Sellers and Librarians, and at the Gardens.—PROMENADE, THIS DAY. Tickets, 2s. 6d. Bands at Four. Notice.—A BALLOT for the ELECTION of FELLOWS, on MONDAY next, JULY 8th.

ARCHITECTS' BENEVOLENT SOCIETY.
PATRONS.
Sir Robert Smirke. A. J. B. Beresford Hope, Esq. M.P.
PRESIDENT—Sydney Smirke, Esq. R.A.
TRUSTEES.
Philip Hardwick, Esq. R.A. | Charles R. Cockerell, Esq. R.A.
Geo. Gilbert Scott, Esq. R.A.
TREASURER—William Tite, Esq. F.R.S. M.P.
The List of Subscribers and Annual Report may be obtained of the Hon. Secretary. Subscriptions will be received by WILLIAM TITE, Esq. St. Helen's-place, the Treasurer; or by Mr. GOULD, the Collector, 52, Great Ormond-street, W.C.
J. TURNER, Hon. Secretary, 15, Wilton-street.

COMPETITIONS.

LINCOLN and LINCOLNSHIRE MECHANICS' INSTITUTION and COUNTY MUSEUM.—The Building Committee invite architects to send in DESIGNS for the ERECTION of a BUILDING, in the City of Lincoln, for the above Institution. Architects wishing to compete may, upon application to Mr. W. HUDDLESTONE (a member of the Committee), 26, Melville-street, Lincoln, receive a plan of the site, and any other information required, after the 15th day of JULY instant. The plans to be forwarded, carriage-free, addressed to the Librarian of the Mechanics' Institution, Lincoln, on or before the 31st day of AUGUST next, accompanied with a sealed envelope, bearing a motto corresponding with one to be placed on the architect's design, together with the architect's name. The successful architect will be employed to carry out his design, at the usual commission.
Lincoln, July 3, 1861.

CONTRACTS.

NOTICE to BUILDERS.—TENDERS are required for making a CONNECTING-CUT between the Gun Wharf and the Dock-yard Tunnel, Devonport.
Persons desiring to Tender for these Works must leave their names at the Office, on or before the 13th day of JULY, and pay the sum of 10s. 6d. for the bills of quantities, which will be forwarded to each party as soon as prepared.
The Secretary of State does not bind himself to accept the lowest or any Tender.
Royal Engineer Office, Devonport, 3rd July, 1861.

WAR DEPARTMENT CONTRACT.—NOTICE to BUILDERS.—TENDERS are required for new GROYNES in front of Breakwater at Southsea Castle, near Portsmouth.
Parties desirous to Tender for the erection of these Works, must leave their names at this Office, on or before the 19th day of JULY, 1861, and pay the sum of 10s. 6d. for the bills of quantities, which will be forwarded, to each party as soon as prepared by the Government Surveyor.
The Secretary of State does not bind himself to accept the lowest or any Tender.
Royal Engineer Office, Portsmouth, July 3, 1861.

COAST-GUARD CONTRACT.—NOTICE to BUILDERS and CONTRACTORS.—Persons desirous of TENDERING for the ERECTION of a COAST-GUARD STATION at Pelter, near Folkestone, in the county of Kent, may inspect the drawings and specifications at the Coast-guard Station, Folkestone, or at this Office, between the hours of TEN and FOUR, from MONDAY, the 24th instant, to SATURDAY, the 6th of JULY now next ensuing, and both inclusive (Sunday excepted).
Tenders to be sent to this Office not later than TWELVE o'clock at NOON of the 8th of JULY, under seal, and directed to the Commodore Controller-General of Coast-guard, and endorsed "Tender for Pelter Station."
The Lords Commissioners of the Admiralty do not pledge themselves to accept the lowest, or either of the Tenders.
Dated this 19th day of June, 1861, at the Admiralty.
Coast-guard Office, 12, Spring-gardens, London, S.W.

WAR DEPARTMENT CONTRACT.—NOTICE to BUILDERS.—TENDERS are required for RENEWING the SLATING, BOARDING, LEAD WORK, &c. on the Roof of the Convalescent Hospital, at Woolwich.
Parties desiring to Tender for the execution of these works must leave their names at this Office on or before, WEDNESDAY, the 17th day of JULY, 1861, and pay the sum of 10s. 6d. for the bills of quantities, which will be forwarded to each party as soon as prepared by the Government Surveyor.
The Secretary of State does not bind himself to accept the lowest or any Tender.
Royal Engineer Office, Woolwich, June 21, 1861.

TO BUILDERS.—Builders desirous of TENDERING for the ERECTION of SIX COTTAGES at Waltham Abbey, Essex, may communicate, in the first instance by letter, with the Surveyor, W. M. BROWN, Waltham Abbey, N. who does not, however, bind himself to reply to all communications.

TO BUILDERS. — Persons desirous of TENDERING for the ERECTION and COMPLETION of a PAIR of SEMI-DETACHED VILLAS, proposed to be built at Bexley-heath, Kent, for Mr. S. G. Richmond, may see the drawings and specification, at the Office of Mr. WILLIAM GOSLING, Architect and Surveyor, 82, Wellington-street, Woolwich, on and after WEDNESDAY, May 10.—Tenders to be sent in on WEDNESDAY, 17th instant. Mr. RICHMOND does not pledge himself to accept the lowest or any Tender.

CONTRACTS.

TO BUILDERS and CONTRACTORS.—TENDERS are required for the ERECTION of a FARM-HOUSE, OFFICES, and STABLE, upon a farm at Borough Fen, near Crowland, Lincolnshire, for Robert W. Maxwell, Esq. The drawings and specification can be seen at my Office up to and including the 13th inst. and afterwards at Mr. MAXWELL'S, Borough Fen, near Crowland. Tenders to be delivered at my Offices, as under, on or before WEDNESDAY, 24th inst. at TWELVE o'clock precisely.
SEXTUS DYBALL, Architect and Surveyor.
No. 18, Bucklersbury, Cheapside, E.C.
N.B. The lowest or any Tender will not necessarily be accepted. The site is about 3½ miles distant from the Peakirk Station, Great Northern Railway, and about 8 miles from Peterborough.

TO BUILDERS.—Persons desirous of giving in TENDERS for ELEVEN HOUSES advertised to be built at Woolwich, are hereby informed that the delivery of the Tenders is POSTPONED till THURSDAY next, the 11th instant. Plans and specifications can be seen, and quantities obtained, at Mr. R. L. CURTIS'S Offices, 8, Union-court, Old Broad-street, City.

HEMEL HEMPSTEAD TOWN-HALL IMPROVEMENTS.—To BUILDERS and OTHERS.—Persons desirous of TENDERING for the ERECTION of the proposed Improvements and additions to the TOWN-HALL, Hemel Hempstead, according to the plans and specification thereof, prepared by Mr. George Low, Architect, of London, are hereby informed that the said drawings, specification, and terms of contract may be inspected at the Offices of Mr. GEORGE LOW, Architect, 10, Basinghall-street, London, E.C. between the hours of TEN and FOUR o'clock, from the 8th to the 17th day of JULY next, inclusive; and at the offices of Mr. S. C. HARRISON, Surveyor, Hemel Hempstead, from the 18th to the 29th of JULY next, inclusive, between the hours of TEN and SIX o'clock. Tenders, under seal, to be delivered at the Town Hall, Hemel Hempstead, on or before TWO o'clock, on WEDNESDAY, the 31st day of JULY next, and then and there be opened and declared in presence of all parties then attending, interested therein.
THOMAS WOODMAN, Jun. Bailiff.
Hemel Hempstead, July 4th, 1861.
N.B. The Bailiff does not pledge himself to accept the lowest, or any Tender.

TO BUILDERS.—Persons willing to TENDER for BUILDING a PAIR of semi-detached VILLAS, at Windsor, can inspect the plans and specification on and after MONDAY, JULY 22nd, at the Architect's Office, who reserves the right of rejecting the lowest or any Tender. Tenders to be delivered AUGUST 1st, FOUR o'clock punctually.
HENRY McCALLA, C.E. Architect.
Office, 25, Westbourne-place, Eaton-square.

BUILDERS desirous of TENDERING for the ERECTION of a WESLEYAN CHAPEL, proposed to be built at Stretford, Lancashire, may see the drawings, specification, and conditions of contract, and obtain a copy of the bill of quantities at the Office of Mr. HENRY FULLER, Architect, 28, Cooper-street, Manchester, between the hours of TEN and FIVE, on and after TUESDAY, JULY 16th. The Tenders to be delivered to Mr. SAMUEL McCOY, 4, Chapel square, Birchin-lane, Manchester, by NOON, on WEDNESDAY, JULY 24th. The Trustees reserve the right of declining the whole or of accepting any of the Tenders submitted, and will require security.

TO BUILDERS.—Persons desirous of TENDERING for the proposed NEW CHURCH at East Moulsey, near Hampton-court, Middlesex, can see the drawings, specifications, &c. at the Office of the Architect, Mr. TALBOT BURY, 50, Welbeck-street, W. any day after SATURDAY, JULY 6. The Tenders must be sent in to the Architect not later than JULY 20th. The lowest or any Tender will not necessarily be accepted.

NEW CHURCH, BANGOR.—The Committee for promoting the building of a new Church in Bangor are prepared to receive TENDERS for the building. The plans and specification will be deposited for inspection at the Chapter-room of the Cathedral, in Bangor, from the 1st until the 10th of JULY next, both inclusive, and at 10, Basnett-street, Liverpool, the offices of Mr. H. P. HORNER, the Architect, from the 12th to the 20th of JULY next, both inclusive. All Tenders must be sent in, sealed and endorsed, "Tender for new Church at Bangor," to the undersigned on or before the 24th of JULY next. The Committee do not bind themselves to accept the lowest or any Tender.—By order of the Committee,
A. J. DODSON, Honorary Secretary
Bangor, June 26th, 1861.

COUNTY and CITY of WORCESTER LUNATIC ASYLUM.—To BUILDERS and CONTRACTORS.—The Committee of Visitors are desirous of receiving TENDERS for the ERECTION of a NEW WING to the above Asylum, to accommodate 100 patients.
Plans and specifications may be seen on application to MARTIN CURTLER, Esq. Solicitor, Sansome-place, and any further information that may be required, may be had by applying to Mr. H. ROWE, the Architect, 17, Foregate-street, Worcester. Sealed Tenders (endorsed Tender for New Wing), must be delivered (free of cost), at the Office of MARTIN CURTLER, Esq. Sansome-place, Worcester, on or before FRIDAY, the 2nd of AUGUST next.—The Committee will not necessarily accept the lowest Tender.
Worcester, June 25, 1861.

TO BUILDERS and CONTRACTORS.—WANTED, TENDERS for the ERECTION of a PARSONAGE-HOUSE and OFFICES, at Widdrington, near Morpeth. Plans and specifications may be seen, after JULY 6, on application to Mr. STEVENSON, Clerk of Works, Widdrington; or to the Architects, Messrs. J. & J. GIRDWOOD, 49, Pall-mall, London, to whom sealed Tenders must be sent, on or before JULY 20. Quantities will be supplied by Mr. C. BALAM, 10, Buckingham-street, Strand, London. The lowest Tender will not necessarily be accepted.

[For remainder of Contracts see next page.

CONTRACTS.

CONTRACT for GUERNSEY GRANITE CURB.—The West Ham Local Board of Health are prepared to receive TENDERS for the SUPPLY of 12-inch by 6-inch GUERNSEY GRANITE CURB, to be delivered along Forest-lane and Cemetery-road, within their district. It must be dressed plain and square on two faces, and the ends and the back joints must be perfectly straight, and beds and joints fair. The delivery must be commenced within fourteen days, and completed within a month from the date of the order. Tenders to be sent in to me on or before MONDAY, the 8th JULY next, endorsed "Tender for Curb,"—By order of the Board,
J. G. B. MARSHALL, District Surveyor.
Rokeby House, Stratford, E., June 13th, 1861.

TO CONTRACTORS and BUILDERS.—The Town Council of Northampton is prepared to receive TENDERS for the ERECTION and COMPLETION of a TOWNHALL, &c. The drawings and specifications, prepared by EDWARD WILLIAM GODWIN, Architect, Montpelier, Bristol, may be seen at the Town Clerk's Offices, Newland, Northampton, on and after the 29th instant. For the convenience of persons desirous to Tender, the quantities have been taken out by a competent building surveyor, and may be obtained from the Town Clerk on and after the 29th inst.; but the Town Council is not to be held responsible for the correctness of the quantities. The person whose Tender is accepted will be required to provide two sureties for the due completion of the work. Tenders to be sent to the Town Clerk, marked "Tender for Building Townhall, &c." on or before the 13th day of JULY. The Council does not pledge itself to accept the lowest or any Tender.
JOHN JEFFERY, Town Clerk.
Newland, Northampton, 20th June, 1861.

TENDERS WANTED.—TENDERS are wanted for the various WORKS in the ERECTION of the PERTHSHIRE DISTRICT LUNATIC ASYLUM, near Murthly Station, on the Dunkeld Railway. The plans and specifications may be seen in the hands of Mr. P. SOUTAR, Clerk to the Lunacy Board, Perth; or Messrs. EDWARD & ROBERTSON, Architects, Reform-street, Dundee; who will give all requisite information. Offers may be lodged either with Mr. SOUTAR or Messrs. EDWARD & ROBERTSON, on or before 20th JULY next. The Board are not bound to accept the lowest or any Tender.
Perth, 27th June, 1861.

TO BUILDERS and CONTRACTORS.—WANTED, TENDERS for the ERECTION of FARM-BUILDINGS, at Vernon's Oak, on the estate of the Right Hon. Lord Vernon, at Sudbury, near Derby. Plans and specifications may be seen at the Estate Office, Sudbury, on and after JULY 1st; and sealed Tenders must be sent to Messrs. J. & J. GIEDWOOD, Farm Architects, 49 Pall-mall, London, before JULY 15th. The lowest Tender will not necessarily be accepted.

TO BUILDERS.—The Guardians of the Poor of the Stepney Union being about to ERECT a UNION WORKHOUSE at Bromley, Middlesex, Builders desirous of submitting TENDERS for the ERECTION thereof, are hereby informed that they can see the Drawings, Specification, and Draft Contract on application to Mr. HENRY JARVIS, Architect, at his Offices, No. 29, Trinity-square, Southwark, between the hours of TEN a.m. and FOUR p.m. Printed forms of Tender may be obtained on application to Mr. JARVIS, as above; or to me the undersigned, at the Board Room, Ratcliff Workhouse, York-street West, Commercial-road East, and no Tenders will be received that are not made upon such forms. Each Tender must be delivered at the Office of the Board as above, before THREE o'clock p.m. on WEDNESDAY, the 10th day of JULY next, and must be accompanied by a sealed envelope containing the names of two proposed sureties for 2,000*l*. The parties Tendering must personally attend at the Board-room, Ratcliff Workhouse, as above, on WEDNESDAY, the 10th day of JULY next, at THREE o'clock in the afternoon precisely. The Board do not bind themselves to accept the lowest or any Tender if not satisfactory.
By order of the Board, W. H. SWEPSTONE, Clerk.
Board-room, Ratcliff Workhouse, June 7, 1861.

BUILDERS willing to TENDER for the ERECTION of FARM BUILDINGS, making alterations to the present buildings, and performing extensive other works, at Kidderpore Hall, Hampstead, for C. Cannon, Esq. can inspect the drawings, conditions, and specification, at the HALL, on and after WEDNESDAY next, JULY 10; also at the Architect's office, where Tenders are to be delivered on MONDAY, JULY 15, FOUR o'clock punctually. The lowest or any Tender not necessarily accepted. The Contractor (should it be required) will have to enter into and give the requisite securities for the due performance of the said Works.
HENRY McCALLA, C.E. Architect.
Office, 25, Westbourne-place, Eaton-square.

FOR CONTRACTORS' WAGGONS
DOBBIN CARTS, BARROWS, and RAILWAY PLANT,
Apply to HUGHES & MARCH,
Engineers and Timber Merchants, Falcon Works, Loughborough.

CARTS, LADDERS, BARROWS, &c.—GEORGE ELL, Manufacturer of Carts, Vans, Waggons, Trucks, and Implements for railways, town use, agriculture, and exportation, CONTRACTORS', BUILDERS', and DECORATORS' TRADE UTENSILS.
G. E. has constantly on hand a Stock of CARTS, BARROWS, LADDERS, TRESTLES, STEPS, &c.
DOBBIN and other CARTS, specially adapted for exportation, with Wrought-iron Wheels.
SCAFFOLDING, LADDERS, BARROWS, TRESTLES, STEPS, &c. LENT ON HIRE.
Price Lists on application.
GEORGE ELL,
EUSTON WORKS, 366 and 368, EUSTON-ROAD, N.W.

FREDERICK DENT, Chronometer, Watch, and Clock Maker to the Queen and Prince Consort, and maker of the Great Clock for the Houses of Parliament, 61, Strand, and 34, Royal Exchange.

BENSON'S WATCHES.
"Perfection of mechanism."—*Morning Post.*

Gold, 5 to 100 Guineas.
Silver, 2 to 50 Guineas.
Send two stamps for "Benson's Illustrated Pamphlet," descriptive of every construction of watch now made, with their prices.
Watches sent to all parts of the Kingdom free by post,
Or to India and the Colonies for 5s. extra.
33 & 34, LUDGATE-HILL,
And 46 & 47, CORNHILL,
LONDON, E.C.
(ESTABLISHED 1749.)

THE VILLAGE CLOCK.—A serviceable, well-made, and warranted TURRET CLOCK, to go eight days, and strike the hours, for forty guineas; not to strike, from fifteen to twenty guineas; adapted for the village church or school.—Apply to
JOSEPH FAIRER,
Turret Clock-maker to H. M.'s War Department,
188, St. George-street East, London.

TO CEMENT MANUFACTURERS, BUILDERS, and OTHERS.—TO BE SOLD, with immediate possession, a compact PORTLAND CEMENT WORKS, very conveniently situate at Greenwich, with river frontage capable of producing about 1,500 bushels weekly, and to which the manufacture of Roman cement might be added. The premises are held under a lease, of which forty-six years are unexpired, determinable (by the tenant) at an earlier period. The premises, although peculiarly adapted for cement works, would be found very desirable for many other purposes.—For particulars, apply to Mr. J. F. POMEROY, Morden Wharf, East Greenwich, S.E.

ROOFING METAL.—WETTERSTEDT'S PATENT.—The attention of Architects, Builders, and others, is directed to this material, where lightness and economy of construction, combined with security and permanence, are required. The price has been very much reduced, and can be had, with full particulars, of manufacturers, W. W. & R. JOHNSON & SONS, Limehouse, London, E.

TUPPER & COMPANY,
Manufacturers of
PATENT GALVANIZED AND GALVANIZED TINNED SHEET TILES, GUTTERS, WIRE, TANKS, TUBING, &c.
Contractors for Iron Roofs, Churches, Schools, and Buildings of every description.
MERCHANTS' ORDERS EXECUTED.
STOCKS KEPT IN LONDON AND BIRMINGHAM.
Works—LIMEHOUSE and BIRMINGHAM.
Offices—61A, MOORGATE STREET, E.C.

TO IRONMONGERS AND THE TRADE GENERALLY.
D. HULETT & CO. Manufacturers of GAS CHANDELIERS, HALL LANTERNS, GLASS LUSTRES, &c. &c. A large assortment of the newest designs always on show, every article marked in plain figures. Patentees, and Manufacturers of the Mercurial Gas Regulator. Complete Pattern-book and Price-lists, 12s. Nos. 55 and 56, High Holborn.

SKAIFE & COMPANY,
Manufacturers of
PATENT GALVANIZED IRON.
Sheets, Corrugated and Plain; Fencing and Telegraph Wire; Bars, Rods, Hoops, Nails, Screws, and Manufactured Articles, supplied to the Trade. Galvanized Tinned Sheets and Tiles for export.
IRONWORK GALVANIZED.
Roofing orders promptly and carefully attended to
Office—Commercial-road, Limehouse, London.
Works—Copenhagen Wharf, Limehouse.

ESTABLISHED 1774.
AUSTIN'S IMPERIAL PATENT SASH and BLIND LINES.
To BUILDERS, CARPENTERS, and BLIND MAKERS.
J. AUSTIN, Manufacturer of the above articles, particularly wishes to direct the attention of the Trade to his
IMPERIAL PATENT FLAX SASH-LINES,
of which he is now making three qualities, and he strongly recommends that in all cases they should be purchased in preference to the PATENT LINES made from Jute, which article has neither the STRENGTH nor DURABILITY of Flax, consequently cannot give so much satisfaction to the consumer.
They can be obtained of all Ropemakers, Ironmongers, Merchants, Factors, and Wholesale Houses, in Town and Country.

GAS for PRIVATE RESIDENCES, &c. J. T. B. PORTER & CO. Gas Engineers, Lincoln, and 7, John-street, Adelphi, London, W.C. Manufacturers of Improved Gas Works of any magnitude for towns, villages, &c. The patent National Coal Gas Apparatus for mansions and all isolated buildings. Without nuisance, economical, and safe; constructed especially for cannel coal, although ordinary coal may be used. The Universal Gas Apparatus, for farm premises, villas, &c. for ordinary coal. Price, complete, with holder and tank, 45*l*. 10s. No brickwork required, and can be fixed in working order in a few hours by any country mechanic.—Further particulars, testimonials, &c. on application.

CAUTION to ARCHITECTS and BUILDERS.—In consequence of complaints arising from the substitution of INFERIOR and SPURIOUS ARTICLES instead of SMITH'S PATENT DOUBLE-ACTION DOOR SPRINGS; SMITH'S PATENT WEATHER-TIGHT WATER BAR; and SMITH'S PATENT WEATHER-TIGHT CASEMENT FASTENING FOR FRENCH WINDOWS;
The above are most respectfully requested to observe that all GENUINE ARTICLES are stamped with the NAME and ADDRESS, SMITH, Patentee, 69, Princes-street, Leicester-square, London, and SUCH ONLY are WARRANTED.

SAME PRICES as THAMES STREET.
COTTAM & COMPANY,
No. 2, WINSLEY STREET,
(Opposite the Pantheon), Oxford-street, W. have completed a large STOCK of every description of
CASTINGS for Builders' purposes, viz.—
RAIN-WATER PIPES, GUTTERS, COAL PLATES, SASHES, RAILING BARS and COPING, SCRAPERS, TRAPPED GRATINGS of all kinds, SINKS, FURNACE BARS, SOOT DOORS and DAMPERS, FURNACE PANS, SASH WEIGHTS, AIR BRICKS, BALCONY PANELS, BALCONETTES, TOMB RAILINGS, BALUSTER BARS, NEWELS, BRACKETS, CANTILEVERS, PUMPS, &c. at the Thames-street Prices, with a view of supplying the West-end Builders.
COLUMNS, GIRDERS, and general CASTINGS to ORDER at the SHORTEST NOTICE.
N.B. COTTAM & CO.'S only address in London, is 2, WINSLEY STREET, W.

IRONMONGERY.
W. C. ATKINS & CO. (late Walmsley),
STOVE, GRATE, and RANGE MANUFACTORY, and WHOLESALE IRONMONGERY WAREHOUSE,
No. 128, London-road, Southwark, S.
Price Lists forwarded to Builders on application, enclosing a card.

LOSH, WILSON, & BELL,
NEWCASTLE-ON-TYNE,
Manufacturers of Bar Iron, Railway Bars, Forge and Engine Work, Cast-iron Goods, and
STEWART'S PATENT CAST-IRON GAS and WATER PIPES.
Office, No. 7, Size-lane, London.

INSIDE WATERPROOF CASEMENTS.—The objection to French Windows has hitherto been the difficulty of making them water-tight, which can now be completely overcome by RATTRAY & TICKELL'S PATENT, an invention simple, and yet so efficient, that when tested by a force-pump their windows are proof against both water and air, with easy facility for cleaning.—Application to JOHN RATTRAY, 34, Minshull-street, or to JOHN TICKELL, South Hall-street, Strangeways, where specimens can be viewed and tested, and arrangements made for orders, or permission to work from their patent.
Manchester, 1861.

MOREWOOD & CO.
(late Morewood & Rogers),
Dowgate Dock, Upper Thames-street, London: and Lion Works, Birmingham Heath, Birmingham.
PATENT GALVANIZED TINNED IRON AND TILES, GALVANIZED IRON,
PLAIN or CORRUGATED, and CURVED, of all Gauges. Also, BLACK or PAINTED CORRUGATED IRON, GALVANIZED or BLACK CAST GUTTERS, PIPE, &c. All kept in Stock.
Also, Galvanized Water and Gas Tubing, Stamped and Moulded Gutters, Wire, Wire Netting, Nails, Rivets, Pails, &c.
Estimates given for Roofs, and every description of Galvanized Buildings, at the
OFFICES and WAREHOUSE, DOWGATE DOCK, LONDON.

NAILS and IRONMONGERY, from BIRMINGHAM direct.
Builders, Contractors, and Others, supplied with Nails, Iron, and Ironmongery, of every description, at the LOWEST BIRMINGHAM PRICES,
A complete List of which will be forwarded upon application to
FRANCIS BIANCHI (late Blyth & Bianchi),
Nail Manufacturer and General Factor, BIRMINGHAM, and 16, Gresham-street, London, E.C.

IRON ROOFING of CORRUGATED IRON, Wrought Iron, principal Roofs covered with Slates, Iron Bridges, Girders, and Railtugs; also, Portable Buildings for Dwellings, Farm Purposes, Churches, Chapels, Schools, Concert or Dancing Rooms, Theatres, &c. suitable to all Climates, fixed complete, in town or country, or packed for exportation.
For Designs and Estimates apply to
RANDAL STAP, Contractor,
No. 32, KING WILLIAM STREET, E.C.
Where numerous Drawings and Photographs may be seen.
N.B. The Iron Buildings manufactured by R. STAP are not fixtures on Leasehold Property.

THE SOCIETY COMMEMORATIVE, &c. AWARDED G. JOHNSON THEIR GREAT MEDAL AND DIPLOMA IN RECOMPENSE FOR SERVICES RENDERED TO THE PROGRESS OF THE USEFUL ARTS. AUG. 1860.

HOISTING BUILDING MATERIALS.

JOHNSON'S PATENT improved DOUBLE HOIST, and SIX labourers serve TEN bricklayers to a height of FIFTY feet, or twice the number and increased height in same proportion, effecting a great saving of time, with regularity and comfort to the men. These hoists are in use by Messrs. Lawrence & Sons, Holland & Hannen, Peto & Betts, and by other eminent firms in London, Paris, Germany, Algeria, &c. Every hoist is guaranteed, delivered in London, and erected ready for use, if required.—Applications should be addressed to GEORGE JOHNSON, Wandsworth, London, S.W.

HEATING BY HOT WATER.
JOHN WEEKS & CO. KING'S ROAD,
Chelsea, HOT-WATER APPARATUS MANUFACTURERS.
Buildings of every description, and of the most extensive dimensions, can be effectually warmed by Hot Water. JOHN WEEKS & CO. can give innumerable references of Churches, Dwelling-houses, Warehouses, &c. &c. where they have fixed their Hot-water Apparatus. Also to be seen in extensive operation at their Premises, King's-road, Chelsea.

KINDER'S PATENTED BAND SAW-GUIDES, for preventing the constant breaking of the Saws.—This simple arrangement can be fitted to any of the existing machines, and will be found to repay its cost in a few months. French Band Saws of the best make. Prices and full particulars, both as to the saws and Guides, may be obtained on application to ARTHUR KINDER, 18, Great George-street, Westminster.

NEWLY INVENTED AND PATENT
CONTINUOUS ROOFING SHEETS, OF GALVANIZED IRON,
In lengths of from 50 to 500 feet and upwards.
Usual width, 2 feet.
Price 2½d. per foot. A liberal discount to the trade.
The principal advantages by which this material is distinguished are as follows:—
1. By its total cost, fixed complete, being less than that of common asphalted felt.
2. By the ease with which it can be applied by unskilled labour.
3. By the rapidity with which roofs and buildings can be covered by it.
4. By the important fact that sheets can be made of any length required.
For Instructions as to Fixing, and explanation of the mode of Manufacture, and all other particulars, apply to
MOREWOOD & CO.
Dowgate Dock, Upper Thames-street, London, E.C.; and Lion Works, Birmingham-heath, Birmingham.

STUART & SMITH respectfully refer to ST. GEORGE'S CHURCH, DONCASTER, as an Illustration of their
SYSTEM of WARMING,
which secures an agreeable temperature at a very small consumption of fuel. Other references, and every information given, on application at their Manufactory,
ROSCOE PLACE, SHEFFIELD; or to their London Agent,
Mr. B. BARBER, No. 20, John-street, Adelphi.

HOT-HOUSES for the MILLION.—On the principle Invented and Patented by SIR JOSEPH PAXTON, M.P. combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. Lean-to Houses, 30 feet in length, can be had for less than 17*l*.; span roofs, 30 feet in length, for 33*l*.; and all other dimensions at equally low prices. Delivered free to any railway station round London.—Illustrated circulars, with lists of prices, can be had on prepaid application to
SAMUEL HEREMAN, 7, Pall-Mall East, London.

WANTED, a SECOND-HAND CONDENSING STEAM-ENGINE, with one cylinder (vertical), possessing all the latest improvements, and in good working order. Dimensions about as follows: diameter of cylinder, 30 inches; stroke, 4 feet.—Address, with full particulars, THOMAS D. PARET, 11, Churchill, Edinburgh.

A 4-FEET 6-INCH capital second-hand open-fire KITCHEN-RANGE, warranted in good condition, and a 5-feet ditto, TO BE SOLD for a small sum.—Apply to Messrs. EDWARDS & SON, 49, Great Marlborough-street, Regent-street.

TO BUILDERS and OTHERS. — For SALE, an IRON SPIRAL STAIRCASE. Diameter, 3 feet 9 inches; rise, 11 feet, to be seen at the Lion, 1, Newcastle-street, Strand.

TO BUILDERS AND IRONMONGERS.
J. PARSONS offers himself to the trade as GASFITTER and BELLHANGER, under the newest improved principle, in all its branches.—Address, 4, Princes-terrace, Keppel-street, Chelsea.

GREAT FIRE.—FIRE-PROOF SAFES and DOORS.—J. CLEGG, Builder, has several genuine Fire-proof Safes and doors, obtained from alterations, TO BE SOLD, a great bargain. Also, good Book-cases, Desks, and Tables, as they must be cleared. The Premises to be disposed of immediately.
Note—4, Pilgrim-street, St. Paul's, City.

CHURCH BELLS for SALE.—TO BE SOLD, by PRIVATE CONTRACT, THREE BELLS of good tone. Estimated—

Notes.	Weights.	Diameters.
A.	8 cwt.	36 inches.
B.	6¼ "	31½ "
C.	5¼ "	29½ "

For further particulars application to be made to the Rev. SAMUEL SHEEN, Market Rasen, Lincolnshire.—By order,
BELLAMY & HARDY, Architects.
Lincoln, June 15, 1861.

The Builder.

VOL. XIX.—No. 961.

A View of Kingston-upon-Hull.

"Without base flattery or false coyned words,
To mouldy madams, or unworthy lords;
Or whatso'er degree, or townes, or nations:
I ever did and still will scorn such fashions
Heare say, sometimes vpon a lye may light,
But what I see and know I dare to write,
Mine eyes did view, before my pen set downe
These things that I have written of this towne."

John Taylor, the water poet's "very merry wherry ferry voyage to Hull, 1622."

ON the west bank of the river Hull, where its placid waters keep tryst with the broad ripples of the Humber, and thenceforth flow—two loving streams in one—towards the sea, stood the small port of Wyke. This seaport, doing a modest trade in the export of wool and import of wine, found favour in the sight of Edward I., and was enfranchised by him under the name of Kyngeston-sœur-Hull. Hereupon new roads were made; a ferry was established; a mint and four furnaces were set on foot; a harbour was formed; embankments thrown up; and the foundation laid for that increase of commerce which Hull has ever since enjoyed. Not long afterwards the king, journeying northward, came some miles out of his way to inspect the condition of the newly-created borough; and, although this visit was but of short duration, the effects of it were soon visible in the various improvements by which it was succeeded; being more especially shown, perhaps, in the paving of the streets. The clumsy and fantastic ships of this old time brought home large stones as ballast, and with them the energetic Corporation paved their prosperous town:—"At such tyme as al the trade of stokfisch for England cam from Isleland to Kingston, bycause the burden of stokfisch was light, the shipes were balessed with great coble stones brought out of Isleland, the which yn continuance paved al the town of Kingeston thorough-out."

This account of the benefits accruing from a royal visit of inspection suggests a consideration of the very important results that would be attendant upon a similar progress made by our gracious Queen. If our chief towns were in the annual expectation of a visit from her Majesty, with a sanitary commission in her train, invested with the necessary powers, the authorities of each would be vieing with the other to secure the royal approbation; and the bickerings of cliques, which, in too many instances, delay the progress of sanitary improvement, would be absorbed in a general determination to present the most thorough completeness.

The revival of the art of brickmaking is claimed by Hull, and the fact of the magnificent parochial church of the Holy Trinity having been found to be built partially of brick, beneath its casing of stone, goes some way to prove this assumption correct. It appears that bricks, under the name of wall-tiles, were in common use in Hull in Henry VI.'s time; and Queen Elizabeth passed a decree which made them still more in vogue:—"No person thereafter theake or cause to be theaked any house, tenement, or stable in Kingston-upon-Hull in part or in all with straw, reade, hay, or otherwise than with thacke tyle under penalty of ten pounds." The manufacture of the modern mantle of brickwork—cement—is now carried on to an immense extent. Vast cargoes of fine plaster and Roman and Portland cements are exported by Messrs. George & Thomas Earle to Russia; and besides, there is great supply manufactured for home consumption. Hull also claims the credit of having originated the Greenland whale fisheries, two ships having been fitted out from this seaport in 1589. As many as sixty whaling ships, in the course of a season, have sailed from Hull; but, owing, perhaps, to the use of gas, Colza, and paraffine oils, and to metal hoops having superseded whalebone, this branch of maritime commerce is nearly extinct. It has, however, been provided with a traffic of still greater extent, Hull being the second centre on the eastern coast for the ocean steam packet service. Iron ships, too, are now constructed here for the Baltic and Russian trades, concerning which we shall have more to say hereafter.

The principal modern commerce consists in an immense import and export trade: countless bales of cotton, forwarded across country from Liverpool, are exported to Sweden, Russia, and elsewhere: salt from Cheshire is shipped in enormous quantities; sheep-skins, sheep's wool noils, linens, painters' colours, varnish, antifriction grease, mill grease, "muncibona," bone size, stoneware, earthenware, hardware, haberdashery, turnery, machinery, India rubber manufactures, photographic apparatus,—even such out-of-the-way commodities as perambulators and mother-of-pearl,—are sent out in bales, in bags, in bundles, in baskets, in packages, in cases, in casks, in kegs, in piles of such dimensions as leave the spectator capable of entertaining no other conviction than that a new world has been discovered which requires "fitting up" immediately.

The import trade is still extending itself:—the tonnage entering the port during the past year being 1,212,521 tons—an increase of 74,332 tons over that of the preceding year. Canada and the Baltic ports send timber: America, the south of France, Russia, and the Baltic send wheat: Denmark, Sweden, the Rhine, and the Saale and Œderbruch districts send barley, besides oats, peas, and beans. Red and white clover seeds that have ripened on the broad plains of Germany, the north of France, and America; linseed from the Black Sea, from Bombay, Petersburg, and Konigsberg; rape-seed from Dantzic and Stettin; tar from Finland; olive oil from Italy; prunes from Bourdeaux; oranges from St. Michael's; currants from Patras; tea and sugar; wines and spirits, cattle-bones and ash, flax, tow, codilla, hemp, shoddy, spelter, bloom iron, ultramarine, basket rods, bark, bran, pollard, bulrushes, and "sundries" are all unshipped, side by side, on the quays of Hull, and thence distributed over the kingdom, or, in a manufactured state, again shipped for exportation. Some idea of the traffic thus created may be gained from the consideration of one single fact—that 528,790 quarters of linseed were imported last year from the districts above named; and as many as 19,352 tons of oil extracted from linseed were exported to Rotterdam, Hamburg, Dunkirk, Rouen, Caen, Christiana, Stockholm, Montreal, &c. The ships carrying on this sea traffic for the most part belong to Hull, being owned by such merchant princes as the late mayor, Z. C. Pearson, Thos. Wilson & Sons, Brownlow & Lumsden, and Gee & Company. Then there is a large amount of wealth realized in the trades that are carried on with the agency of mills: thus we find, besides the mills for crushing the various oil-yielding seeds,—in the neighbourhood of which the air is unctuous with an aroma as of oil-cake and cattle food, into which the residue is prepared,—mills for sawing timber and veneers; mills for grinding corn and colours; mills for grinding bones; and mill-stone makers—from the French burr.

The approach to Hull by railway, past the town of Selby, famed for its ancient, extensive, and beautiful parish church, is extremely prepossessing. It is along some miles of a slightly embanked avenue of trimmed trees, whence there is a prospect of the Yorkshire wolds on one side and of the dimpled wavelets of the Humber on the other. The favourable impression is confirmed when the neat and commodious terminus is gained—which is light and airy, with peculiar roof-work like an entanglement of iron cobwebs—and we enter the very handsome Royal Station Hotel. And here we would applaud, generally, this modern feature of railway management—first-class hotels in addition to the conveniences of a terminus—where travellers or visitors may sojourn at ease, free from the commercial buzz of the heart of the town. Of this particular Royal Station of Hull we would speak in terms of praise: we find the plan, like the interior of a grand palazzo Romano, to consist of a large and lofty central covered entrance saloon, having arcaded corridors on four sides, whence the different public and private apartments, and the staircases of access to them, are readily visible: although in process of re-embellishment, the interior was replete with almost regal comfort and accommodation.

When we leave the hotel or the terminus, the favourable impressions they have created are dispelled by the unpromising aspect of the streets of entry to the town. The first is a street occupied on one side with a series of ephemeral erections for strolling photographic artists, and box-like shops on wheels, some occupied, others closed, backed by the rear view of "Wilson's Buildings," and on the other side by a timber-yard and a row of small Gravesend-looking lodging-houses, dignified with the name of Station-terrace. Farther on, when this same line of road has raised greater expectations by assuming the name of Paragon-street, we come upon a huge magnified dolls' house, with deep-blue paper curtains to the windows, which the posters, with which it is placarded—announcing the prospective arrival of our admirable tragedians, Mr. and Mrs. C. Kean,—proclaim to be the Royal Queen's Theatre. This building, since the destruction of the Theatre Royal the only one in the town, is both common and tasteless; and is surrounded with the bleery shops peculiar to the neighbourhood of a theatre,—supper-rooms, oyster-rooms, and cigar depôts. Then we pass the Paragon Carriage works, where we note the latest style of dog-cart and other saucy equipages occupying the pavement of approach to the boxes, pit, and gallery. Then the Paragon Stables, with Paragon-buildings over them, then the Paragon Inn: except that this thoroughfare is well paved, and except for the Egyptian-fronted and yet business-like cabinet manufactory of the Messrs. Andas & Leggott, the aspect of this street certainly belies its name, and is unlike what that of the approach to a large and thriving town should be. In continuation of, and still in line with, this self-vaulting street, we come to a junction of Chariot-street and Waterworks-street, where we are perplexed at the sight of innumerable long poles, inclining and projecting from the fronts of the houses. We conclude we are in the barbers' quarter, and perhaps we are partially correct; but we find that this free use of flag-poles is due to the nautical taste of the inhabitants, which displays itself more especially on gala days, when the low, irregular houses are decked with flags. Turning into Junction-street, we perceive the Wilberforce monument, erected in record of the abolition of negro slavery in 1834; which, owing perhaps to the same nautical predilections, very much resembles a light-house in its outlines. But what is the meaning of this crowd? Horses, carriages, cabs, passengers on foot, merchants pressing on to their several appointments, clerks due at a certain time to a minute, housewives going to market, doctors hurrying on their morning rounds, lounging idlers and fashionable callers, all mixed up with the *polloi* filling the street "*en queue?*" "Why, sir," replies very civil P.C. No. 10 H, to our astonished query, "they are only moving the bridge to allow a vessel to go

through the dock." We then ascertain that the ancient part of the town of Hull has been surrounded with the river and with docks so completely that there is no ingress or egress except by means of four similar drawbridges: these docks being full of shipping, it follows that the bridges are frequently being drawn aside. It must be understood that Hull proper, like the city of London, has become the commercial centre of a city that has quadrupled its original dimensions; the principal business streets, the market-place, the High-street, the ancient parish church, the banks, the Post-office, the Custom-house, the Sessions House, the Townhall, the Corn Exchange, as well as the merchants' offices, being contained in the ancient boundary. As in our own case, the wealthier merchants reside in less crowded localities, but resort daily to their respective offices: their clerks follow suit. The main market roads from Anlaby and Beverley converge at this bridge: the amount of incoming traffic is therefore prodigious; and there is, besides, that produced by the necessities that compel the inhabitants of the ancient city to enter the suburbs, where, as is usual, the railway station, the public park and gardens, besides the residences of the poorer and the wealthier classes, are situated. Since the establishment of railways, when minutes have become of more consequence than before, a regulation has been made that the bridges should not be opened during the ten minutes previously to the starting of trains; but even with this rule the oft-recurring delay upon these thoroughfares—for ships are passing in and out sometimes a dozen times a day, and the manœuvre occupies about ten minutes—must be very vexatious. Let the reader picture such a scene occurring on Ludgate-hill, Cornhill, or the Strand, and note the rapidly-augmenting crowd, he would perceive the great aggregate loss of time thus daily suffered by the citizens of Hull,—a goodly crew, to adopt the prevailing nautical tone, of 96,509 souls, according to the last census.

While the crowd is waiting we take a turn round the magnificent new dock which the bridge in question separates from Prince's Dock. It is named in honour of her Majesty's visit, "The Queen's Dock;" and is about 600 yards long and 100 yards wide. The north side and west end are full of small craft laden with coals, bricks, and slates; and here and there are fishing smacks. On the same side and end are rows of crazy, tumble-down erections in the shape of houses, presenting the appearance of having been constructed from wrecks or from old ship cabins. They have small windows with bull's eyes to most of them, through which the passers-by catch distorted evidences of the sea trades carried on within. Here are ship-painters, ship-joiners, ship-sheathers, ship-mercers, ship-chandlers, vendors of ships' tar, pitch, varnish, oakum, quadrants, compasses, and telescopes, and an announcement indicating "ship undertaking." This is a fine site wasted.

Meanwhile the bridge has slowly swung into its place, and the crowd has disappeared. Calling to mind the fact that the dock accommodation is avowedly inefficient, and that a Parliamentary Bill has just bestowed necessary powers to a company to form new docks on that portion of the town forming the foreshore of the Humber, it is to be hoped that the great inconvenience caused by this arrangement will be taken into consideration, and a permanent bridge built in this central line of traffic. The utility of the Queen's Dock would be by no means decreased, except for vessels of large tonnage, there being another outlet at the west end into the harbour.

We cross the narrow neck of the dock, and find ourselves in one of the main streets of the ancient part of the city—Whitefriars Gate—the "Corso" of Hull. This is a street in which many of the principal buildings are situated, as well as the handsomest shops. On the left-hand side of the road, immediately facing a palatial drapers' shop—Marris, Willows, & Smith's,—there is an "entry," leading to a partly untenanted settlement of cabin-like tenements, pebble-paved: on the same side, a few paces further, facing the *Hull Packet and Times* Publishing Office, there is a similar blemish. The first "turning" is Parliament-street, appropriately chosen by the lawyers for quarters,—a street of houses precisely alike on both sides, after the Harley-street type,—a snug street to come upon, full of attorneys, notaries, registrars, accountants, and law stationers, with a police-station in the midst having a new blazing red splashed granite portico; its mundane necessities admitted, however, by the residence of a surgeon, an architect, a wine-merchant, and an ale and porter store. Coming into the busy thoroughfare again, we note that the Bank of England has set the good example of building the branch premises,—having a solid façade, of Italian character, with high mansard roof, and handsome chimneys and dormers,—a few feet back; thus making the street more commodious, for which the bank deserves commendation. The Custom-house is a large building of the Queen Anne style, with carriage-way in the centre, leading to a central square court, and slightly projecting wings. We next near the Post-office, which, for a town so far in advance in many respects as we find Hull to be, is curiously ill placed. It is out of the thoroughfare, and up a passage in a court; but, when found, is large and convenient. At a junction, formed by the Land of Green Ginger and Bowl Alley-lane, are the new "County buildings,"—a two-storied block of offices, of red brick and stone, with wide semicircular arched windows and doorways, and heavy cornice. Whitefriars Gate now becomes Silver-street, possessing the same characteristics as before,—Delapole House, a large linen-drapery and tailoring establishment, standing conspicuous, as a very original treatment of shop-fronts and doorways, as regards street effects. It has a cloister-like arcade, with coupled detached iron columns, and two stories above, of plain red brick arched windows, deeply recessed, with, for a sky line, a trussed cornice. The bronze colour of the sashes of this front has a dismal appearance; but it is an effective piece of street architecture. Silver-street terminating in the market-place, we are suddenly ushered into the region of empty carts and full stalls. Here additional space is very much wanted, for all the surrounding streets and even the church side are crowded with the overflowings of the market. Butchers, green-grocers, and farmers, would be all the more comfortable for a little additional elbow-room, and we will presently point out how this may be advantageously obtained. When the site of the market-place was determined it was quite central, but the town having stretched so far away on to the roads towards Beverley, Hessle, and Anlaby, it is now for all housewifery purposes at the very extremity. The houses around the market-place are deformed with huge lettering, which makes them appear out of all proportion: in one instance a dwarfish house has the name of Roberts, in letters about 8 feet high, occupying the whole width of the parapet of the front. The King William Hotel adjoining, commits a like enormity to a smaller scale, the word "hotel" being represented in letters about 5 feet high; and other instances obtrude themselves on the eye. This want of taste is more to be regretted, because the fine equestrian statue "erected," says the pedestal, "in the year 1734, to the memory of King William III., our great deliverer," gives a bold rich tone to the neighbourhood in which it is situated. Both horse and rider are entirely gilt.

The market-house itself is off the market-place, approached by a narrow street: it is very small and inconvenient although tolerably cleanly kept. There is a transept devoted to the fish-market and urinals—a disposition which is offensive. There are two plans by which the market might be improved without any distant removal of site. It is clearly quite inadequate for the requirements of the overgrown town in its present locality, built up as it is with houses all around. (The ash-bins of surrounding householders are positively built on the roofs of the butchers' stalls, the contents of which are only to be removed by conveying them downstairs through the houses.) We would, therefore, strongly suggest that it should be removed to the space on the west side of the church, where the demolition of a block or two of inconsiderable houses in Princes-street, Robinson-row, and Dagger-lane, would leave an ample space of easier access to the districts without the docks, or,—and we are coming to an ugly spot in our journey,—there is a quarter of slaughter-houses in this crowded part of the town which could be well displaced. We numbered as many as *seventy-nine* of these abominations, nearly all clustered together in narrow lanes, bearing the fit names of Pig's-lane, Sewer-lane, and so on. This valuable site being cleared of these unhealthy shambles, there would be a great accession of comfort for the frequenters of the market, besides the removal of a plague spot, that in the heart of a city cannot but be fraught with dangerous results. Queen-street, a continuation of the open road line, formed by Lowgate and the market-place, and in which are situate the principal commercial hotels—Glover's, the Vittoria, and Marshall's,—would benefit greatly by this arrangement; for although the Humber flows past the foot of the street, the effluvia from so many slaughter-houses within a few paces of their back premises must be very disgusting in hot weather. To make matters worse for this neighbourhood, there is a huge cataract of sewerage which discharges into the Ferry Dock, at the end of Queen-street.

Close by the market-place is the ancient church of the Holy Trinity, or, as worded within, Saint Trinity. This is a beautiful Early Perpendicular cruciform edifice, consisting of a nave and choir, both with aisles and north and south transepts. The nave is fitted up as the parish church, the transepts and choir being cut off by means of a glazed rood-screen, and forming a vast unseated vestibule to the nave. On the occasion of the administration of the Holy Sacrament, the communicants must quit their seats in the well-aired nave, and remove to the stalls in the aisles of the choir. But as we are aware that the restoration of the edifice is under the care of Mr. G. G. Scott, in all probability these irregularities will be overcome. The fittings—stone pulpit, with massive open-panelled parapeted staircase, brass eagle, and poppy-headed seats,—are very costly. The flat spaces between the beams of the low-pitched roofs of nave and aisles are of blue, sparkling with tiny gold stars; the rest of the wall surfaces being but dirty whitewash. The choir and transepts are adorned with many very interesting monuments, both ancient and modern. We may not linger among them save to notice two modern monuments of great meirt, by T. Earle; the one telling a story of much pathos in bas-relief, with this simple inscription: "Our son William, in the sixteenth year of his age, on the night of January 19, 1858, was swept by the surf of a heavy storm from the pier-head into the sea;" the other an alto-relievo monument to the memory of a sheriff and mayor of Hull, who died in 1630, erected by the Trinity House Company as a mark of the admiration of his character two hundred and thirty years after his death. A good name is a glorious heritage.

Traversing Church-lane to gain the High-street we observe two new buildings in red brick and stone, presenting examples worthy of imitation in all similar localities. They are the premises of Messrs. Copesteake and Moore, and of the Temple Steam Printing-office. Set back from the road, they widen it; and having a series of large, round-headed windows, plenty of light is ensured within. Church-lane is one of the many small intersections of High-street, which, under the name of staiths, slope down to the harbour. A roaring traffic is in full play, as in Thames-street; and the

staiths and lanes, as well as the High-street, being very narrow, dead locks are of continual occurrence. A little judicious pruning at the junctions of some of these places would be of great service. High-street, where the footway is only one foot wide and the roadway but fifteen feet across,—once the residence of the princes of the place,—is now occupied by merchants' offices, warehouses, tenements, and seed-crushing mills. The birthplace of Wilberforce, a heavy brick building with a projecting centre, set back in a court enclosed with a heavy brick wall, is shared by the Hanoverian, Homberg, and Bremen consulate. The mayor's (Mr. Hodge's) very large new mill, well built of light bricks with stone heads and sills, with a lofty octagon chimney shaft, faced by W. & W. Darling's mill, of many stories in height, are noticeable features; as is also the imposing new Corn Exchange, a spacious room, 180 feet long by 50 feet wide.

Charity may be said to walk open-handed in Hull, the institutions for the aged, the poor, the sick, and the young, being very numerous. There are also various institutions which modern philanthropy has suggested, a penitentiary, a dispensary, a sailors' institute, a mechanics' institute, and baths and washhouses. The last-mentioned buildings present a showy façade to Trippet-street: they are fitted up with every contrivance to lessen labour; but the internal accommodation appears to have been sacrificed for the sake of the exterior. The compartments for the washer-women are very cramped, and the heat from the hot water and drying-closets stifling. The mangle-room, attained by a narrow, awkward staircase, is over the boilers, and is, as may be expected, oppressively hot: the result is that in summer these baths are not much in favour, and are nearly deserted; and at other seasons the heat is so unbearable that the women divest themselves of all but very necessary attire when frequenting them. The workhouses are ornamental buildings, in the Tudor and Italian styles. The public schools, too, are numerous. And the Royal Institution would be an ornament to any town. There are two cemeteries (and a prospect of a third by the closing of the Trinity Church burial ground), the one at Sculcoates with a single cardboard chapel in the midst; the other on Derringham Bank, approached by a long row of young trees, extending the whole length of the road. We observe that there are some few—a very few—of the institutions going down for want of public support; and these are those which would be supposed to be most popular. The Zoological Gardens, for instance, so much esteemed by the younger portions of most communities, are advertised for sale: the Botanical Gardens, and the Public Baths in Bath-place, appear to be in disregard. The Citadel, too, seems to be one of the objects that are now overlooked, the use for it having ceased. It occupies a triangular site at the mouth of the Hull, and is surrounded with water. An idea was once entertained of converting it into a public park; but was relinquished when the Pearson Park was munificently presented to the townspeople: it is now partly occupied by the great timber yards of Smithson, Lee, & Co., R. & T. Harrison, and R. Wade & Co.; and the volunteers make use of it as a drill ground. The general appearance of the barracks, officers' quarters, magazines, and garrison moats, is forlorn.

Recurring to the subject of the iron ship-building carried on in Hull by the makers, C. & W. Earle, Samuelson & Son, and the Navigation Iron Works, it must be admitted that the substitution of iron for wood is an improvement; but it is a question whether the construction is not too slight. Several losses have occurred of the iron ships leaving these docks during the last winter for the icy seas of the north,—the *Wesley*, *Bothnia*, *Kingston*, *Moscow*, *Thor*, and *Edinburgh*, never returning to port. Iron ship-building must be considered as only experimental as yet, and every fact bearing upon the working of iron ships under different circumstances should be carefully noted. Thus, it having been found that the seas dashed over the engines and put the fires out at a critical moment, the machinery is now completely covered, and ensured against such a catastrophe. One or two ships have been wrecked from this cause alone. Many similar after-thoughts could be brought to bear advantageously. There have been some fine steam ships launched upon the waters recently,—the *Anglia*, *Lion*, *Gertrude*, *Z. C. Pearson*, *Pacific*, and the beautiful screw, *Hero*,—whose fortunes will be watched with interest.

Hull has had all the difficulties attendant upon a low-lying site to contend with; and these are not altogether overcome yet. In the fourteenth century floods were very disastrous; and the commissioners charged with the superintendence of banks for the protection of the country against inundations found it necessary to raise the road between Hull and Anlaby 6 feet. Archbishop Corbridge (says the painstaking antiquary, Mr. Charles Frost) writing to the Prior and Convent of Giseburn, in 1307, tells them that in conveying the bodies of deceased persons from the chapel at Kingston to the parish church of Hessle for interment, it often happened that the bodies and attendants were all washed away by the waters of the Humber. From time to time measures were taken to meet similar contingencies; and by the time the seventeenth century was ushered in, a systematic system of protection appears to have been in operation:—

> "It yeerely costs five hundred pounds besides,
> To fence the towne from Hull and Humber's tydes,
> For stakes, for bavins, timber, stones, and piles,
> All which are brought by water many miles;
> For workmen's labour, and a world of things,
> Which on the towne excessive charges brings."

When we visited Hull we found the question of sewerage and water-supply in warm discussion: both were avowedly insufficient;—the points at issue being the respective merits of the various plans for their improvement. At Newcastle the mischief is in the obstinate refusal of the corporation to adopt a general well-ordered scheme; but in Hull the delay occurs from too much counsel. Numerous are the authorities that have been consulted—Mr. Hawksley, C.E., Mr. Austin, C.E., Mr. Ranger, Mr. Clarke, Mr. Newman,—besides the surveyor and assistant surveyor to the board, Mr. Marillier and Mr. Butler, to say nothing of the pet theories of Messrs. Samuelson, Eccles, Lambert, Nightingale, Wilkinson, Galloway, and other members of the local board of health. On the inland side of the town four large open drains or dykes,—Cottingham-drain, Barnston-drain, Skidley-drain, and Sutton-drain,—some miles in length, bring down their quota of refuse matter to empty into the Hull. The mouth of the river being very muddy, the bottom is impregnated with sewerage matter, which is prevented from going to sea by the silting produced by the harbour. A length of one of the dykes, appropriately called Drain-side, has houses on either side of it,—Wilson's-row, Cottingham-place, Richmond-terrace, and Clough-terrace, and has annual cleansings "*just before the summer, when the solid matter taken from it is sold.*" The sewerage of the town has three cavernous outlets into the Humber—one near the Barton Ferry pier, another in Limekiln Creek, the third on the site of the proposed new dock—which are provided with flood-gates: when the tide is low a cataract of foul sewage vomits forth on to the muddy shore, with clouds of seething malodorous vapour.

The surveyor and inspector of nuisances have important tasks before them. There are very many districts where the working population live in "cribs and folds," small houses of two stories, with tiny forecourts before each house: out of the streets in these localities branch countless passages, squares, places—in other words, wide alleys of houses of similar peculiarities, each possessing the smallest imaginable forecourt. Opposite one of these alleys, called Success-place, there stands Barber's-yard, where a notice states "Pigs are kept and killed by C. Bishop." But the general aspect favours the assumption that the residents pride themselves upon the neatness of their homes. They therefore seem to us to deserve every assistance in their efforts to promote these objects. Even the Irish quarter—Mill-street, Middle-street, and Cross-street—is less terrible in Hull than in towns where the houses are many-storied, notwithstanding that slaughter-house, No. 47, is within scent. The inhabitants of a "pottery district" complained to us of a mountain of town scavenage; and a nidorous cod-liver oil manufactory was not considered a pleasant neighbour. It was gratifying to find that the corporation consider local improvement, like charity, should begin at home, and have boldly attacked the condition of their own offices, which are situate in very questionable vicinage.

The water-supply in the seventeenth century was obtained from Springhead.

> "Some ten yeeres since fresh water there was scant,
> But with much cost they have suppli'd that want,
> By a most ex'lent water-worke that's made,
> And to the towne in pipes it is conval'd;
> Wrought with most artificiall engines, and
> Perform'd, th' art of the industrious hand
> Of Mr. William Maultly, gentleman;
> So that each man of note there always can
> But turn a cocke within his house, and still
> They have fresh water always at their will:
> This have they all vnto their great content,
> For which they each doe pay a yeerely rent."

Since Taylor, the water poet, thus quaintly sang, two hundred years ago, the supply has been taken from the river Hull, below the town of Beverley; and as the sewage of that town falls into the river, it is certainly very desirable that a further change should be made. It is now proposed to return to the original source. As this subject is at present under consideration and execution, and a very lively interest is taken in it, we trust that "a most ex'lent waterworke" will be once more realized; and that the "great content" testified to by Taylor, will again descend upon the inhabitants, not only to "each man of note," but upon one and all.

THE PRESENT AND PAST BOUNDARY OF THE RIVER THAMES AT LONDON.

WHILE many of our antiquaries are busily engaged in pursuit of the works of man, in an early stage of society, either on the banks of the Nile, the Tigris, or the Euphrates; and others, with the greatest enthusiasm, are exploring his works in a more advanced state of refinement, on the banks of the Ilissus or the Tiber; there are very few who take an interest in searching the musty records of remote antiquity, concerning the banks of the Thames; and still fewer who will take the trouble to travel fifty miles along the shores of our metropolitan river, to investigate the alterations which have been made on its boundary at some former period.

In attempting to describe the history of a particular district, and at the same time to point out some of the conclusions that may be inferred, from certain well-known facts, it is always difficult to avoid uninteresting and tedious detail; while it is indispensable to notice many important truths, which may convince those who have not previously paid attention to the subject, that the author is not wandering in a wilderness of crude hypotheses, or of unsupported assumptions. In a short sketch of the history of various changes which have taken place, during fifteen or twenty centuries, on the banks of a beautiful river, it is almost impossible to avoid going precipitately into certain general conclusions, when various self-evident facts pass rapidly before us. There is no river in this country whose course is more instructive than the Thames, as the united efforts of nature in the first instance, and afterwards of man, have effected so many important changes on its banks; changes and operations which have been more or less under the dominion of its rulers for a long series of ages—indeed, so long, that both history and tradition are silent upon the subject: therefore the ingenuity of the antiquary is at full liberty to wander through ages of past time, amidst the memorials of epochs long since forgotten.

When the traveller passes over those fertile plains, where gently-flowing streams nourish in their course an abundant vegetation for the sustenance of lowing and bleating herds; or where the soil is studded with flourishing villages and

✠

opulent cities, adorned with superb monuments of human art, and inhabited by a numerous mercantile population, he is not led to suspect that at some remote period of our history the same district was daily overflowed by the neighbouring river; and that it would at this time be a marshy swamp, had not the industry of our ancestors prevented it by their embankments. We have before us their vast and important labours, which the idle or the ignorant pass daily without observation, without inquiry, and without thought.

According to poetical notions, the grandest dwelling-place on earth, for man, is the mountain-top; the cloud-capped throne of the eagle, where the wind and the storm unboundedly revel—and where, far as eye can reach, the imagination may luxuriate over a vast expanse of terrestrial grandeur. Ever restless nature has been industriously at work during countless ages, in changing the surface of the world we inhabit. The smallest islands, as well as the largest continents, are subject to the very same laws: all present very different surfaces from those which existed in times long past. The various kinds of earth, which once clothed the summit of the loftiest peak, that is now bleak and bared to the primitive rock, are in time removed to a lower region by atmospheric influences, by rain, and the agency of chemical and mechanical decomposition; assisted, in no trifling degree, by changes which are brought about through vegetation, and feeding numerous tribes of animals, from the microscopic insect to the lowing herds, and even up to man: each performs its part in the general disturbance and rearrangement of the earthy surface. A drizzling rain will gradually soak into the ground; a gentle shower will drain into the rivulets without injuriously disturbing the soil, and the neighbouring streams will be but slightly tinged with colouring matter; but a copious thunder-storm falls so violently, that it removes the finer portion of the earthy surface from the meadows and arable land, into the water-courses, leaving the flints and stones on the field, thus deteriorating the vegetative qualities of the entire district. The same physical agency continuing in operation, will gradually transport the softer and lighter portion of the soil from the valley along the rivulet to the chief river. The velocity of a large river current is most rapid in the centre, or where the water is deepest, and least on the sides and bottom, where the current is retarded by friction; consequently the transporting power of a river is smallest where it comes in contact with the substances to be transported. Whenever a running stream, charged with mud or fine sand, has its velocity checked, as when it enters a lake or overflows an extensive plain, the sedimentary matter, previously held in suspension by the motion of the water, sinks by its own gravity to the bottom. In this manner layers of mud or sand are periodically deposited one above another, so as to form marshes by the side of a river, which in time become raised to the level of the highest tides. During the same interval, the deep and more rapid part of the current carries the alluvial matter, held in suspension by the water, to the sea, where it forms an estuary at the mouth of the river. Thus it appears that there is a universal tendency to bring all terraqueous things to a level; and were this law of nature to continue in operation alone, the whole superficial strata of the dry land would in time be removed into the depths of the ocean, when terrestrial animals and vegetables must cease to exist. But volcanic influence, by upheaving mountain masses, raising new islands from the bottom of the sea, and many other extraordinary phenomena, acts as a redeeming feature for the future conservation of plants and living creatures which breathe air.

When the ancient Britons were sole lords of this island, the population was probably very limited; their towns were few and far between; and their rivers flowed freely over the low lands of the adjacent country, confined by no artificial barriers, and having no other limits to their overflow than such as nature had provided. The spot on which the City of London is built—that is, the part actually included within the old boundary walls—is situate on dry gravelly soil, rising gradually from the level of a beautiful river, sufficiently distant from the sea for inland convenience, yet within the influence of tidal currents; a locality desirable in every respect, and apparently destined by nature for the site of a city. The earliest mention of London by the Roman historians occurs in the annals of Tacitus, in which it is described as the residence of merchants, and the chief mart of trade and commerce in Britain. These expressions may be adduced in favour of the argument for the British origin of London; as it cannot be supposed that a place would be thus characterized if its foundation had been so recent as the time of Tacitus; for, in all probability, not more than thirty or forty years had elapsed from the Roman conquest to the time mentioned by him, which is a term much too short to admit of such high mercantile prosperity as is there recorded.*

With the exception of superficial changes, effected during the lapse of ages by atmospheric influences and repeated inundations, to all appearance the country bordering the river Thames, in the counties of Kent, Surrey, Middlesex, and Essex, has undergone no material geological change since the period when it was raised from the waters of the last ocean beneath which it had been submerged, and when the Thames, together with its tributary streams, first began to flow in their present channels.

Taking the circuitous windings of the Thames into account, the length of the river between Oxford and London cannot be less than a hundred miles. In this distance, the fall of water is about 230 feet. The farther from the sea, the more rapid the current. For instance, between Oxford and Maidenhead the average is about 30 inches fall per mile; from thence to Chertsey, 26 inches per mile; between Chertsey and Mortlake, 20 inches per mile; near London the fall is not more than 1 foot per mile; afterwards the fall diminishes gradually till the river unites with the sea. These calculations are entirely independent of tidal influence. Throughout the greater part of this distance, west of London, appearances seem to infer that the river has generally been confined within its natural banks, and that the stream has rarely risen above the level of the neighbouring meadows; consequently inundations are of small extent, and of rare occurrence.

In descending the river towards the sea, the first district that appears to have been subject to occasional overflowing of waters, at a remote period, is that of Chiswick on the northern, and Barnes on the southern margin of the Thames. If these places were not entirely overflown in early times, it is more than probable they were swampy marshes, liable in some degree to temporary inundation at high spring-tides. Proceeding along the Middlesex side of the water to Fulham, we find an extensive tract of low land between Parson's-green and the river, chiefly occupied by market gardeners, who have been induced to settle on it by the great depth and richness of the soil compared with that of more elevated situations. Part of this land still retains the name of "Eel-Brook Common," indicative of its aquatic celebrity in days of yore. The whole of Battersea, as far as Vauxhall Bridge, including Nine Elms, and the fields proposed to be converted into a public park, was formerly entirely overflowed by the river at high water; and at this time the neighbourhood would be a shallow lake, and a boggy morass, at the flow and ebb of every tide, were it not for the excellent embankment which still remains.

Nearly all that part of Westminster, which lies between Chelsea Hospital and Scotland-yard, may be said to have been originally within the influence of the river; Grosvenor Canal and Basin have long been supplied by letting in the water at high tide; the greater portion of that neighbourbourhood, especially about Eaton-square, which is now covered with dwellings of an aristocratic order, has been artificially raised ten, and in some places as much as 15 feet above the former level of the "five fields," which were marshes, at one time frequently overflowed by the river, as the Penitentiary and its vicinity would now be, if there were no embankments. A water-mill belonging to the abbot of Westminster, situate at the end of the present College-street, and turned by a little stream which passed along that street eastward into the Thames, gave rise to the name of "Millbank," which formerly extended from the entrance to Grosvenor Canal, near Chelsea Hospital, all along the river-side to the Abbey and Palace. These buildings, the most ancient and most remarkable of any (west of London), were evidently erected on the highest and dryest ground, called "Thorney Island," being naturally elevated rather above the general level of a swampy neighbourhood, consequently not often inconvenienced by floods.

In attempting to trace the extraordinary changes which have taken place in certain districts under the government of various rulers, or in describing the situation and appearance of Westminster, when in the rudest state of nature, and when wholly unfit for the abode of civilized men, there will be some difficulty in concentrating the scattered rays of fact and probability to a clear focus, and in separating the reasonable and genuine from the improbable and fabulous. But the same continuity of ideas which induces us to listen to the traditional account of "Thorney Island," with its sacred and palatial edifices, will lead us to imagine, with every probability of truth, that at some remote period of our metropolitan history, the shallows of the river extended, uninterruptedly, over the present site of Parliament-street, Whitehall, and nearly the whole of St. James's Park, up to the Abbey and Palace of Westminster.

I am aware that the mere assertion of such a statement, will have no more weight than that of an individual opinion, unless certain facts are adduced in proof of such argument; but if any one will take the trouble to observe the mark of high water at Whitehall Stairs, he will see that it is very little below the pavement in front of the Horse Guards; and that the gravelled surface of the parade has a gradual declivity, for drainage, towards the west, or towards the pleasure-garden and plantations within the railings of St. James's Park, where the surface of ornamental water is actually lower than the highest tides. Circumstances in favour of this hypothesis have exposed to view, some of the uppermost strata beneath Whitehall and Parliament-street; namely, during the summer of 1850, while constructing the new common sewer from near the Abbey, through Privy-gardens and Scotland-yard, into the Thames, I observed, where the men were digging through Parliament-street, that the ground from the surface to a depth of 7 or 8 feet was a modern accumulation of refuse matter of all kinds, including foundations of old walls, and a large quantity of brick, stone, and mortar rubbish, the whole of which rests upon a considerable thickness of black, muddy, alluvial deposit, evidently transported matter, which has been washed away from some other place by the force of the current, and deposited in its present situation, where the waters were shallow and the current very gentle: immediately beneath this sediment is the original gravelly bed of the Thames. That these beds of mud and silt, which are spread over the surface of much older formations, have been deposited in their present resting-place, by the running waters of the Thames, cannot reasonably be disputed; for, in addition to other evidence, they contain various species of recent fluviatile shells, precisely similar to those which still inhabit the neighbouring river. Thus it may be said that, although we have no positive proof, nevertheless we have every reason to believe that, in days of yore, the fisherman may have cast his net in six, eight, or ten feet of water where there is now erected on solid ground rows of substantial edifices, with public roads, above the reach of the highest tides, and such as a sovereign of the most important nation in the world can use when proceeding in her state carriage to the British senate.

In pursuing the course from Westminster, along the north or Middlesex bank of the Thames, the ground is considerably elevated above the river all through the town, and it is not until we have passed the Tower, which is the eastern boundary of the City of London, that there is any land below the level of high water. The site of St. Katharine's Docks may, originally, have been marsh land, below high tides: this appears pretty certain, because, when the docks were being excavated, a vessel was disinterred from the alluvial plain of the Thames, the interior of which was filled with fluviatile silt. The situation of the London Docks and the whole of Wapping would be liable to frequent inundations were it not for the embankments, part of which still retains the name of "Wapping Wall."

The most easterly part of London, comprising Poplar and Blackwall, the East and West India Docks, the Isle of Dogs, formerly called Stepney Marsh, is, according to recent surveys, the lowest ground round the metropolis, the greater portion of meadow land in the Isle of Dogs being at least 8 feet below the Trinity high water mark.

The great spirit of embanking has been continued, where needful, along both sides of the river. We find strong and durable ramparts erected against the tides on the Essex shore, at the levels of Plaistow, East Ham, Barking, Dagenham, Wennington; and on the Kentish coast, at the marshes of Greenwich, Plumstead, Erith, Dartford, Swanscomb; and the same on either side to the mouth of the Thames.

On returning to the Surrey side of the river, opposite the City, we find a larger space of level ground beneath the overflowing of the tide, than

* According to the learned editor of the Welsh "Archæology," Wm. Owen, Esq., Llyn-Din signifies "the town on the lake," Llyn being the British term for a broad expanse of water, or lake.

anywhere else near London. It seems to have been the opinion of Sir Christopher Wren, as we are informed in the "Parentalia," long before any extensive surveys were made, that the whole country between Camberwell-hill and the rising ground of Essex might anciently have been an extensive frith or arm of the sea, which increased in width towards the mouth of the river, and that this sort of estuary was only, in the course of ages, confined within a channel, and reduced to the present width of the river by extensive embankments, which, on the Essex shore, are still perfectly distinguishable as being of artificial origin. Southwark must have been a place of very little importance until a bridge was constructed, probably about the year 900, to form a ready communication with London; and for a long time it consisted of only one main street, called the "Borough High-street," extending from the bridge towards Newington, forming part of a highway across these extensive marshes leading to Camberwell, which place appears to have been known to the Anglo-Romans at an early period. A considerable part of this causeway, constructed with squared stones, apparently from the lower part of the chalk formation, and secured with oak piles, was discovered 15 feet below the present surface of the ground, while digging the Grand Surrey Canal, in the year 1809. Except the Borough of Southwark, Bermondsey near the river, and that part of Lambeth near the church, the whole space on the south side of the river, of an oblong form, about four or five miles long, and about two miles broad, was an entire morass, so marshy as to be almost uninhabitable, and very nearly devoid of houses, as late as the time of James I.

By referring to well-authenticated maps upon a large scale, dated little more than a century back, we find that the neighbourhood of Lambeth, and the whole of St. George's Fields, are represented as a complete marshy swamp, reticulated in all directions with ditches to drain off the surface water. There were, also, numerous ponds, some of which were used for the diversion of the working classes in hunting water-fowls; and in particular, the spot where Bethlehem Hospital is now situated was the far-famed tea-gardens known by the sign of "The Dog and Duck."

England contains few artificial works more surprising than the Thames' embankments, as regards their magnitude and durability; constructed by some unknown ancient inhabitants, who were eminently prodigal of manual labour and cost. Their engineers appear to have planned these immense earth-works for the admiration and utility of the most distant posterity, and with a view of rendering the fame of their mechanical skill almost eternal; but vestiges of antiquity of every kind, the works of human beings, prove that they are constantly subject to gradual decay; more especially such as are constructed with earth only, and exposed to the ebbing and flowing of a tidal river, the force of which, if not checked by repairs, would in the course of many ages entirely obliterate the strongest of them. In certain districts, these ancient embankments have been increased in width to suit modern requirements; for example, until the building of the Penitentiary Prison and Vauxhall Bridge, Millbank was only a footpath by the side of the river between Westminster and Chelsea, whereas it is now widened sufficiently to form a road for carriages laden with any description of merchandize: the same may be said of Narrow-wall, Lambeth, now called Belvidere-road, as well as of many other places on the banks of the Thames which have been made into streets and roads broad enough to suit the increased trade of modern times: but wherever these walls or banks remain as originally left by their constructors, allowance being made for the wear and waste of many centuries, they appear to have been of a general uniform average elevation, something like 2 feet above the rise of the highest tides, and about 30 feet wide. Of course it is no easy matter to examine the nature or properties of the materials which compose these embankments, on account of the danger consequent on the interference of the flood every ten or twelve hours; but where opportunities of observation have offered, it seems as if they had been constructed chiefly with coarsish gravel and mud dredged from the bed of the river, occasionally mixed with fragments of rude pottery, bricks, tiles, and other remnants of old building materials.

A well-informed observer will see in these embankments the imposing evidence of great mechanical difficulties successfully overcome, for the swampy grounds thus gained from the inundations of the river must have been insecure for a very long time, and liable to be overflowed by every high tide, against which effects, recently-formed banks of earth could have been only a feeble barrier, previously to the time when experience led to the adoption of means necessary for their security. We have positive proof that these embankments were extremely well constructed; for, however frequent the failures may have been soon after their formation, we know that breaches and repairs have very rarely occurred within the last few centuries. Sir Wm. Dugdale states in his history of embanking, that in the time of Henry VIII., 1546, complaints were made to Parliament, that "the marshes in the parish of East Greenwich were often in peril of overflowing through the neglect of persons chargeable with the repair of those banks which had anciently been raised for their preservation from that danger." Whether that application was attended to, or whether any repairs were then executed, the chronicles of the time do not inform us; but certainly from that date until the present time only one breach is recorded to have destroyed a part of these extensive embankments in the neighbourhood of London, namely, at Dagenham, in Essex, where, in the winter of 1707, a most destructive breach was made by the wind and tide, in consequence of which nearly a thousand acres of valuable land in the adjoining levels were almost immediately inundated. By this eruption an enormous quantity of earth was washed into the river on the retirement of every tide, which soon formed an extensive sandbank half way across its bed. In this state it remained nearly fifteen years, and the damage occasioned to the navigation of the river by the continuation of this sandbank rendered it a fit subject for Parliamentary consideration. An Act was therefore passed, ordering the imposition of a tax upon shipping for the removing of this obstruction, which, after various attempts, was at length accomplished by the ingenuity and perseverance of Captain Perry, who had been employed in some Russian canals by Peter the Great. The total cost of repairing the embankment was 40,472*l.*; of this sum the original contract only allowed 25,000*l.*, and Parliament afterwards granted 15,000*l.*; so that after all the anxiety and exertions of this spirited individual, during a space of five years, he was obliged himself to defray a portion of the expense. From this short, but well-authenticated, account of one failure and its reparation, which happened almost within our own time, we may form some faint idea of the stupendous labour bestowed on their original construction.* C. H. SMITH.

* To be continued.

WHAT EDINBURGH SAYS OF EDINBURGH.

OUR recent observations on the unsatisfactory condition of the modern Athens (the beautiful and the dirty) have been received in Scotland in the kindly spirit in which they were written. The *Scottish Press* says the articles are exaggerated [of course], but is quite willing to forgive that and profit by the suggestions. The *Press* thus proceeds:—

"The master folly, with which the *Builder* charges us, is that our Town Council substitute 'the study of divinity for the study of drainage;' and undoubtedly his familiarity with our sanitary arrangements, though it smacks wondrously of local inspiration, entitles him to be heard. The Water of Leith he selects as 'the great blot on the Edinburgh escutcheon.' Tracing this well-known stream from its mountain-bed until it becomes a common sewer, he draws a picture of normal beauty losing itself in abnormal filth, which unfortunately, if exaggerated, is like a lady's crinoline when on duty—a fiction founded on fact. Something has been done of late years to confine this stream to an artificial bed, and so at once to reduce its stagnant pools and give currency to its run; but the description of the *Builder* remains, and so far as we can see will remain, too applicable to this arterial slimy drain. Our only chance is that, should this country be visited with pestilence—the cholera or plague,—this reeking miasma of filth is likely to attract sufficient attention, until—realizing the proverb of there being a way when there is a will—means will be discovered, and (better still) adopted, for abating and probably removing this great eyesore and abomination. The next point to which our professional London contemporary calls attention is that while we have constructed vast underground sewers, our houses are without soil-pipes to conduct into these,—rendering domestic cleanliness almost hopeless. Of course he refers to certain streets, and not to the city generally or universally—and the charge cannot be rebutted. We have only half done our work. Means have been taken in some quarters to modify the evil, and we fear it cannot be entirely obviated so long as the present race of houses remains. We are persuaded, however, that if we had a municipal head who—not confining his attention to mere works of ornamentation—would set himself, as did Lord Provost M'Laren, to abate this crying scandal, much might be done to remove from Edinburgh those physical impurities which bring a just reproach upon our city. While those gentlemen in the Council entrusted with the cleaning department have done the best they could, they could only work with such appliances as were at their disposal. The *Builder* may laugh at their surface washing, but the question lies in the mean time between quicklime and allowing things to remain as they are. We do not go into the other blots upon our escutcheon to which our contemporary calls attention. We acknowledge the truth and exaggeration of them all; and are not unthankful to have them exposed, though with a rough but friendly hand.

We are not sure that we would have betaken ourselves to this subject at present, were it not to give our hearty concurrence to the complaint of the *Builder* that our Town Council occupy themselves—if not far too much with other questions—far too little with the physical and material improvement of the city. We are not speaking of Gothic churches or post-offices or time guns, but of ill-paved streets, ill-drained houses, and ill-ventilated closes. They are too dainty in their tastes to deal with town swamps, common sewers, and common conveniences, or how best to purify the foetid atmosphere of our reeking wynds. They leave all this to one man among them—a man to whom Edinburgh owes a debt of gratitude beyond calculation;—and seem to think that they discharge their duty with something like supererogatory fidelity when they listen to his occasional statements and add a few cheers by way of encouragement."

The *Press* wisely asks the Council to take up the matter with earnestness, resolute in their purpose that Edinburgh shall have few or no eyesores to mar her beauty and no hidden miasma to poison her breath; making their city peerless,—the delight of its inhabitants, and the admiration of the world.

The *Edinburgh News* says:—

"The sanitary condition of Edinburgh has often been commented on in our columns: a condition more disgraceful and dangerous it would be difficult to imagine. Some who strut through our healthier streets to see only the beauties of the city and recline at ease in their airy halls will regard this statement as a glaring exaggeration. But those whose eyes are where the wise man meant they should be will acknowledge that our assertion is supported by the most indisputable facts; and the stern experience of thousands could bear its saddening testimony. To strangers who intelligently mark the condition of our city, it must seem astounding that we, who are in all respects so well situate for securing cleanliness and ample accommodation for all sections of the community, should in both be so miserably defective. And a shrewd observer has lately been amongst us. In the columns of the *Builder* the 'Condition of Edinburgh' has been receiving a large share of notice; and to some of the startling revelations and practical suggestions of the writer we would earnestly direct the attention of our readers. The picture drawn may seem darker in print than it does in reality, but strong utterance is needed to awaken a deadened community and bring a callous executive to a sense of their duty. While the people are too silent and submissive, the authorities are either ignorant of the actual state of matters, or shamefully regardless of the trust reposed in them. Let us hope the exposures being made will not be without their influence."

After reprinting some of our statements, and quoting the death-rate, the writer continues:—

"Assuredly, these figures need no comment: they tell a sad tale, and speak of influences at work, the existence of which every right-minded person must deplore. Need we wonder that disease—fevers and other malignant maladies—prevail in those ill-conditioned districts? Need we wonder that drunkenness exists, and that another vice appears in all its hideous forms? In such an atmosphere the higher and finer feelings must be blighted, if not utterly exterminated. It is the disgrace of our city, and the ruin of our population, that these evils have been permitted to grow and fester so long, and that no adequate means have been adopted for their removal. Much has been *said*, and something is at last being *done*. We are glad that the *Builder* has lent his powerful arm to aid us in this warfare against corruption and death; and we are glad to recognize and welcome every effort to wipe out the stain and ameliorate the people."

This is the right tone to take and the right spirit to show.

The ably-conducted *Scotsman*, too, we should have said, reprinted the pith of our statements.

With the aid of local journals thus disposed, improvement may be fairly hoped for.

SALE OF THE INDIA HOUSE, LEADENHALL STREET.

THE India House was purchased by Mr. Clifton, architect, on the part of Mr. Tite, Mr. Heywood, Mr. Kennard, and a few others, for the sum of 155,000*l.* There was no other tender. This sum is at the rate of something more than 100,000*l.* per acre; 10,000*l.* per acre more than was given for Gresham House by some of the same parties. The intention is to use the site in supplying the great want in the City of large accommodation for public companies, rooms for public meetings, &c. Some part of the old building, we believe, will be kept up.

VOLUNTARY ARCHITECTURAL EXAMINATION.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

ON Monday evening, July 1st, a special general meeting of the Institute was held at the house in Conduit-street, to receive and consider the report of the council on the subject of Architectural Examination: Mr. Penrose in the chair. The following are the propositions:—

Regulations and Curriculum.

The examination shall be arranged in two classes, so as to offer to a candidate the opportunity of acquiring an acknowledgment of ordinary proficiency, and further an acknowledgment

of honourable distinction. No candidate under thirty years of age shall be permitted to present himself for an acknowledgment of honourable distinction without having previously passed the examination in the class of ordinary proficiency.

The examination shall in no respect be conducted *viva voce*. It shall take place in the last week of the month of January, as often as there shall be five candidates seeking an acknowledgment of ordinary proficiency: and it shall occupy not more than three days for the candidates in that class, with not more than three additional days for the candidates seeking an acknowledgment of honourable distinction.

The first of such day's examination shall be in drawing and design; the second in mathematics and physics, with professional practice; the third in materials and construction, with history and literature; while the fourth, fifth, and sixth days shall be assigned to the same purposes in similar order; languages being included on the fifth day. The hours of attendance shall be from ten till five, except on the sixth day, when they shall be from ten till two: and on each day there shall be an interval of one hour, during which time no work shall be allowed, and the Institute shall provide some simple refreshment.

Upon the days of examination the candidates shall have access to such books of tables as may be provided by the honorary secretaries, under the advice of the examiners.

A candidate, who has passed in the class of ordinary proficiency, shall not be required to attend on the first three days of any subsequent examination at which he may present himself for the class of honourable distinction.

The examiners shall be not less than three in number, and they shall be elected, as well as two moderators, by the fellows of the Institute, at the first general meeting in January. No examiner or moderator shall be concerned in the examination of any candidate connected with him by any tie of relationship, tuition, or business. No examiner shall attend at the Institute during the hours of examination.

The papers of questions and requirements of work shall be framed by the examiners as much as possible with direct reference to architecture, and in conformity with the applications of candidates, regulated by the subjects in the following programme.

COURSE OF EXAMINATION.

CLASS OF ORDINARY PROFICIENCY.

Preliminary Work.

A measured sketch of some existing building, or portion of a building; a perspective sketch of some existing building, or portion of a building; a drawing of some ornament from the round or relief; and a perspective view with working plan, section, and elevation, of a design by the candidate for some building, together with its whole specification, and a portion of working details at full size.

Work to be done in the Presence of the Moderators.	Number of Marks.
Drawing and Design.—A design for some building, or portion of a building, in the style named by the candidate, the subject being given by the examiners	1,750
Mathematics.—Arithmetic, including the square root; algebra, including simple equations; Euclid, books 1 and 2; mensuration ..	500
Physics.—The elements of mechanical philosophy, and specially heat, light, and ventilation; the composition and resolution of forces	500
Professional Practice.—The principles of estimating; the laws relating to accident, agency, contracts, and dilapidations	500
Materials.—The general natures and properties of building materials, including their decay, preservation, quality, and strength	750
Construction.—The detail drawings and specification for such branches of the work suggested in the above-named design (including drainage), as the examiner may indicate	750
History and Literature.—An outline of the characteristics of the principal styles of architecture in Europe; the particular characteristics and history of any one style named by the candidate	1,250
	6,000

CLASS OF HONOURABLE DISTINCTION.

Preliminary Work.

Original details at full size of work for wood, stone, marble, mosaic, glass, iron, brass, precious metals, textile fabrics, or embroidery; sketches or measured drawings of existing buildings or other subjects of design; a drawing of the human figure from the round or from memory; a subject of landscape gardening; an architectural subject in colours; a subject of decoration, in colour or otherwise; and some specimen of skill in modelling, or in carving, either in stone or in wood: specimens in four at least of these branches being necessary for the admission of the candidate.

Work to be done in the Presence of the Moderators.	Number of Marks.
Drawing and Design.—Such designs, drawings, and specimens of skill, in the style or styles named by the candidate, as may be thought needful to test his skill with regard to such preliminary work as may have been attached to his declaration: the subjects to be given by the examiners	600
Mathematics.—Algebra, including quadratic equations; Euclid, books 3, 4, and 6; plane trigonometry; conic sections. The candidate to name the extent of the examination that he thinks himself capable of passing	600
Mathematics and Physics applied to Practical Purposes.—Mechanics; statics; dynamics; hydrostatics; hydraulics; land-surveying; acoustics; chemistry; electricity; galvanism; geology; and theory of colour. The candidate to name the portions chosen by him	400
Languages.—Translation from Greek or Latin, and translation from or composition in one or more living foreign languages; architectural nomenclature in any living foreign language. The candidate to name the languages	300
Professional Practice.—Laws of property relating to buildings, including fixtures and rights of adjoining owners; arbitration	500
Materials.—Detail of the natures and properties of building materials, including materials which are not in ordinary use	400
Construction.—Complex construction in scaffolding, shoring, securing dangerous structures, pulling down work, alterations of buildings, foundations, walls, partitions, floors, roofs, arches and vaults; formulas for calculating the strength of materials	500
History and Literature.—The structures, architects, writers on practice and theory, and works illustrating styles or structures, in any style or styles named by the candidate ..	700
	4,000

The number of marks to be allotted by the examiners to their questions shall be 10,000: of which 6,000 shall be in the ordinary, and 4,000 in the honourable class of the above programme, and also shall be as above noted,—Drawing and Design, ord. 1,750, hon. 600; Mathematics, ord. 500, hon. 600; Physics, ord. 500, hon. 400; Languages, hon. 300; Professional Practice, ord. 500, hon. 500; Materials, ord. 750, hon. 400; Construction, ord. 750, hon. 500; History and Literature, ord. 1,250, hon. 700.

Of these marks 3,000 in the ordinary class shall gain an acknowledgment of ordinary proficiency: if increased by 2,000 in the other class they shall gain an acknowledgment of honourable distinction: but the candidate shall not be held to deserve the acknowledgment of ordinary proficiency unless he obtains at least half of the number of marks allotted to the divisions of Drawing and Design, Materials, and Construction respectively, in addition to at least a fifth of the number of marks allotted to each of the other divisions in that class.

In order to secure unquestioned impartiality in the examination, each candidate upon complying with the form of application shall receive from the honorary secretaries of the Institute a paper containing a number which he shall employ instead of his signature to all work during the examination. Such number is to be so placed that it may be easily removed by the moderators, who shall substitute their own sign as hereinafter provided. A particular sign shall be affixed by the honorary secretaries to the drawings, specification, and objects of skill submitted with the declaration, so that the authorship may not be known to the examiners.

The examination shall be superintended by two moderators, one of whom must always be in the room during the days of examination. Their function shall be to supply the question papers; to see that the intentions of the examiners are fulfilled; to explain the objects of the questions; to take care that no assistance be given by one candidate to another, and that no other persons than the candidates, except themselves, shall be in the room or hold communication with the candidates during the hours of work; to allow no other books to be used than those above permitted; to verify the production of the work in the room by each candidate; to affix to each work produced in their presence by each candidate a distinctive and numerically different sign; and to supply at the close of each portion of the day to the honorary secretaries such productions, with a register of the signs, accompanied by an index, showing the number designating the candidate. The moderators shall be remunerated by the Institute in regard of their services at each annual examination.

The examiners shall furnish to the honorary secretaries, in time for the opening of the examination, sealed notes, marked as containing in each the subject for work in the division of drawing and design in the class of ordinary proficiency. The examiners shall meet on the first day of examination; and, upon consideration of the drawings produced in the presence of the moderators during the day, as well as of the drawings and specimens of skill attached to the declaration, shall furnish to the honorary secretaries notes of the branches of work for which the respective candidates shall be required to make the detail drawings and specification in the division of construction in the class of ordinary proficiency, and the subjects for which they shall be required to produce specimens of their skill in the division of drawing and design in the class of honourable distinction. At the same time the examiners shall furnish to the honorary secretaries sealed envelopes, marked as containing separately the papers of questions and requirements for each remaining portion of the examination. The contents of those papers shall be, as far as possible, uniform for the candidates; and shall be multiplied only in manuscript or lithography, under the immediate superintendence of the examiners. The honorary secretaries shall enclose each paper separately in another envelope, on which they shall mark the class, division, and number of the candidate for whom it is intended, and these addressed envelopes shall not be supplied except through the moderators to the candidates at that portion of the examination for which each is intended.

As the following articles must be ready for return on the last day of examination, the examiners at the same time, or by adjournment, shall take into consideration any degrees, diplomas, certificates, or medals obtained from any society of architects (approved for this purpose by the Council of the Institute) whose president or honorary secretary, at the time when such distinction was adjudged, shall have been a fellow of the Institute, or from any royal academy of art, or from any university in Great Britain, as well as any printed literary productions, which may be submitted by the candidate; and the designs, drawings, specification, and specimens of skill attached, as hereinafter required, to his declaration; by granting to each group of such objects any number of marks not exceeding two-thirds of the number allotted to the division or divisions appropriate thereunto in the class or classes in which the candidate presents himself.

Within seven days of the last day of examination, the examiners shall furnish to the Council their report, stating the number of marks granted to the above named objects in each division, and to each sign affixed by the moderators to the works produced before them by the candidates.

Upon receiving the report of the examiners, the hon. secretaries shall form a list of the numbers given by them to the candidates, with a schedule of the appropriate signs substituted by the moderators, as well as of the sign chosen by the hon. secretaries themselves for the designs, drawings, specification, and specimens of skill, submitted by each candidate; and shall affix to such list and schedule the marks granted to each moderator's sign, and to each previously-obtained diploma, certificate, medal, literary work, design, drawing, specification, and specimen of skill, so as to ascertain the marks due in each division to each candidate's number: and their report thereof shall be delivered to the Council within a fortnight after the examination.

The Council shall deduct from any marks granted by the examiners to previously obtained diplomas, certificates, medals, literary works, designs, drawings, specification, or specimen of skill, the whole number of marks gained in the appropriate division or divisions in presence of the moderators, if less than the half of those above required for such division or divisions of the class or classes in which the candidate presents himself.

The total number of marks then due to each candidate's number shall thereupon be calculated by the hon. secretaries. Should the marks not amount to a number sufficient to pass the candidate, no further notice shall be taken. An alphabetical list of candidates successful in the class of ordinary proficiency, and a list of candidates successful in the class of honourable distinction, shall be publicly exhibited at the Institute within one month after the examination. The number of marks gained by each candidate shall not be communicated to any person.

All diplomas, certificates, medals, literary works, drawings, specifications, and objects of skill, submitted with the declaration, shall be returned to the candidate at the close of the last day of his examination. No drawings, papers, or other object produced as work in the presence of the moderators during the examination shall be returned to the candidate.

[The list of works recommended to gentlemen proposing to become candidates we will give next week.]

Fees.

Each application for an acknowledgment of ordinary proficiency must be accompanied by a fee of two guineas; and each application for an acknowledgment of honourable distinction must be accompanied by a further fee of one guinea.

The committee have the honour of making the following recommendations:—

That the rules of the Institute as to students and their prizes be taken into consideration by the council with a view to the formation of some system that shall lead educationally towards the voluntary examination now instituted.

That if fewer than six days be devoted to any examination, the examiners should be at liberty to vary the distribution of time prescribed in the regulations.

That the council should be empowered to fix for the first examination a smaller number of days and a less proportion than that above arranged of marks necessary to pass; and to raise for the second examination the proportion of such marks to an average between that of the first and that provided in the regulations, which shall be used for the third.

That, after the third examination, the council should request the examiners to report any change that they may deem desirable in the system."

On the motion of Mr. A. Ashpitel, who spoke at considerable length, the report was received.

In the course of the discussion, Mr. Robert Kerr, Mr. Street, Mr. Newton, Mr. Gray, Mr. Charles Barry, and others, spoke.

Ultimately, the further discussion of the subject was adjourned till November next, to give time for the consideration of the report by provincial and other bodies of architects.

THE PROPOSED EMBANKMENT OF THE THAMES.*

IF the six great schemes (the merest outline of which I have already described) are correctly based upon the assumption that a system of docks is the best way to provide for the rights of the wharfingers, there is little more to be said; for, without doubt, they develope in the most complete manner all that can be done to that end. I, however, after much inquiry and much consultation with those well able to judge, came to the conclusion that the provision of the docks was an entire mistake, and that a simpler plan would be more efficacious, much less costly, and more likely to avoid that rock upon which all previous schemes have foundered,—the rights of the owners and tenants of the river-side property.

These parties at present enjoy the river itself as the great highway, always free and open for their use, the traffic upon which is carried on in cumbrous barges, most of them navigated without

* By Mr. James Edmeston. See page 442, *ante*.

rudders, and not easily guided through tidal-gates and locks under any circumstances, but which could only with great difficulty be so managed in a rapid tide, the velocity of which would be increased if the sectional area of the river is diminished, and which could not lie outside an embankment projecting very far into the river without obstructing the navigation, and being also liable to get injured or swamped.

Unless also each occupier of an existing wharf had at least a water frontage equal to what he at present enjoys,—and that within a very moderate distance of his warehouses,—he would have cause to complain; while, if he had to cross a public way, and if this frontage was not in his private or sole occupation, it would really be almost useless to him.

Further, anything less than the maintenance of one large dock, from end to end, behind the embankment, must diminish the water frontage of some directly, and of all indirectly. Again, a main object of the embankment is missed if the banks of the river are exposed at low water. But would not the docks be receptacles in which there must be a considerable sediment? Are not all docks invariably more or less offensive? Or, if you must have the docks, instead of the river itself, it will be said, "they may be cleansed." No doubt. But who is to do this? Who is to bear the permanent expense, not only of that, but of attending the gates and locks, and of repairing and keeping them in order, which would altogether be no trifle? Unquestionably it is more advantageous to the wharfingers to come to the river front, where there is unfettered navigation; and it must be remembered that at neap tides there would often be less water by some feet over the cills of the dock-gates than has been calculated in the several schemes. It is desirable that no part of the bottom of the river should be uncovered at low water; but what is the gain of going out hundreds of feet into the river, and narrowing a noble sheet of water, some 1,000 or 1,100 feet across, to the 600 or 700 feet which it has at Southwark Bridge. When the sewage is taken out of it, there will certainly be nothing to regret on its broad expanse; and it must be admitted that to go far into the stream, even with all the scientific aids at command, must be to incur a far greater expense than to go only a moderate distance. With these views I proposed to the committee of last year a scheme, according to which the claims of the wharfingers for disturbance would be reduced to a minimum. they would each have still the use of the river, with a direct and private access to it, and that at no great distance from their existing premises; while they would get under the roadway stowage room, which in itself would be valuable; and at the same time the required public road would be provided, and the streets would be relieved, and at a cost which must be far less than if the construction went as far again into the river, and required docks to be made as well.

It may be said that a construction only some 15 or 20 feet above high-water level would not give the river that architectural magnificence which it might gain from a design which would combine the erection of large piles of building. The intended roads would, however, almost hide any such buildings; and I think that question may be much more safely left to time and the ordinary course of events. The river-side is far more likely to gain a picturesque aspect as each warehouse becomes rebuilt separately from time to time; for in these days the exhibition of architectural feeling and taste may almost be said to be sought after and considered necessary, even in building for the merest business purposes, such as workshops and the like; instances of which I might easily enumerate if it was necessary.

All the above schemes have been reproduced before the Royal Commissioners now deliberating, and who have not as yet made any report upon the subject referred to them. But there have, also, been some other schemes brought forward by Mr. Brooks, Mr. Weller, Mr. Bardwell, Mr. Aicken, Mr. Sich, Mr. Newton, and others, which, as no access can be had to the documents in possession of the Commissioners, it is impossible to describe. I can only hope their authors are now present to do so.

Mr. Sheilds has also submitted a plan for a mere roadway, 80 feet wide, in front of the wharfs and warehouses; which, I fear, destroys them. And I cannot see why their owners should not have the private use of the river side, as I have suggested, while the road itself is provided very nearly in the same position.

I do not pretend to predict the decision to which the Commissioners will come; but it is currently reported out of doors that they will decide against all the great schemes, and in favour of some plan which, like that of Mr. Sheilds, is simple in its character, and comparatively inexpensive.

In this place it is impossible not to say something of the style to be adopted. In the several schemes I have mentioned this appears to have been very little thought of. It would not, however, be fair to criticise the designs architecturally; for, no doubt, their talented authors regarded that as only in the faintest way connected with the great work. We, however, think differently, and ought not to allow a silent indifference upon the subject to give colour to an impression, general enough among the public I have no doubt, that in such a matter an architect was somewhat of an interloper. The designs comprise arcades, most extensive columnar arrangements, and massive buildings. We have most favourable circumstance of position, — the majestic river covered with its many vessels—a most picturesque line of foreground; here, public buildings of the most important character; there, ornamental gardens and pleasure-grounds, the piles of warehouses and residences,—an ever-varying panorama, not laid out in a straight line, but curved, and to be viewed in an ever-shifting perspective at almost every point. What is wanted but the master-hand and artist mind so to deal with all this as to make it a picture of architectural richness never equalled in the world? The mixture of busy life with the gaiety of the pleasure-seeker, the view intercepted by the many bridges—railway and other; the vistas beyond,—the lights thrown back from the water,—the deep shadows and mirrored reflections in the purified stream;—I say that this is, of all others, a theme for the architect; and I would that we, as a body, were more alive to the necessity of not allowing these great opportunities to pass without striving for the victory, even with giants such as those I have named.

I will not pretend to argue in any way the style to be chosen. For my own part I would say, let the buildings be broken into masses; but let there be an element of repose, of conscious strength, if I may so speak, in the work which sets bounds to the mighty river; let there be simplicity of treatment with broad effects; not much ornament,—not any breaking up of surface with small projections; and, whatever may be the leaning in the architect's mind towards any particular style or period of art, it will matter little: the result will be sure to satisfy.

Finally, let me express a hope that I have stated fairly what little it has been possible to say within the compass of this brief introduction of the subject, concerning the schemes that I have alluded to; and let me add that a tribute of admiration and praise is due to their authors for the public and spirited way in which they have come forward at the expense, not only of large pecuniary outlay, but of very great thought, labour, and trust, when the nation asked for information as to what was to be done; an expenditure, be it borne in mind, which, in most cases, must be without any return whatever.

WESTMINSTER IMPROVEMENTS.

Now that the railway station is complete, and the hotel begins to disclose its handsome exterior, it is to be hoped that Victoria street may emerge from its chaotic and long neglected condition. The fine range extending on one side, about one-third of the street, towards the station, is finished, and fully occupied; whilst the India-House, with some Government offices, have taken up another range at the Abbey end; all the finished blocks amounting to about one-fourth part only of the entire street. Near the station, however, and opposite the new church, ranges of buildings have been finished, and occupied as chambers for the last year; and other blocks, on a very extensive scale, in Morpeth-terrace and Carlisle-place, are being carried up by Mr. William Jackson. These latter are constructed more especially for families, and are arranged in large or small suites, as complete abodes, on the Parisian plan. There are but four stories above the entrance floor; thus showing less of the hotel, and more of the domestic character, and therefore preserving comparative quietude, when contrasted with portals which give *entrée* to a score of quarters.

There is still a want which is obvious to every observer in passing this grand thoroughfare, and that is an opening to communicate with St. James's Park, on the east side. At present, from the India-House, throughout the whole length of the street, there is none through which any prudent person would venture to drive, and hardly to walk.

A wide traverse-way, cut along the south side of the brewery, and opening out to the barracks, in St. James's-street, would vastly enhance all the property in the vicinage; afford a much needed duct for public traffic; and at the same time circulate the medium of free breathing to her Majesty's Guards, and to whole troops of groundlings in this *terra incognita* of St. Peter's.

As for the rest, the wide streets once cut, the decrepitude of Old Westminster will soon right itself.

DINNER TO MEMBERS OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

On Saturday evening last, June 29th, Mr. Tite, M.P., President, entertained very magnificently, at the Star and Garter, Richmond, the council, past-council, and some other members of the Institute, inviting to meet them the heads of various cognate societies and other distinguished individuals. The guests numbered more than 100. In proposing the health of the Queen, the chairman pointed out the importance of the grant made by Her Majesty, through the Institute, of a royal gold medal annually, for the furtherance of architecture. To the toast, "The Army, Navy, and Volunteers," Captain Haywood (of the City) replied in a soldierly manner. The Lord Mayor, in responding to the toast of his health, which had been proposed in complimentary terms from the chair, said he would undertake to state that the corporation of the city of London, invested though it was with great antiquity, was still constantly endeavouring to adapt itself to the wants and requirements of the time; and that, while boasting of age, it had all the vigour and elasticity of youth, for its council was composed of men elected, not exactly by universal suffrage, but by the great mass of the citizens. Playfully alluding to the presence of Mr. Ayrton, his lordship added, that to those men the reform of the corporation, if it needed reform—for no common institution could pretend to perfection—might be safely intrusted.

The President then proposed the toast of the evening, "The Royal Institute of British Architects, and success to it," amid great cheering. When, he said, the architects of England felt the necessity for greater advantages than the Royal Academy afforded them, he himself well recollected the period when being a student at the Academy, he and others urged on the Council of that day the propriety of opening their library to students, an advantage which was immediately conceded. The architects were growing into an important body at that time, and among them two distinct societies were formed; the first being the Architectural Society, which he joined, and the other the Institute of Architects. The latter received very early indeed the patronage of the Queen, and after her marriage that of her Royal Consort: they obtained also a charter, and long enjoyed the liberal patronage of his late Royal Highness the Duke of Sussex, a most generous and discriminating patron of the arts. Eventually the Architectural Society became merged in the Institute, and the two bodies, so amalgamated, elected, as their president, the late Earl de Grey, a position which that nobleman held for upwards of twenty years, to the incalculable advantage of its members; for to his influence at court was doubtless to be attributed the charter which her Majesty granted to the society, and the gold medal she annually gives for presentation to some distinguished architect, and which is presented alternately to an English and a foreign architect. The Prince Consort had also repeatedly manifested the kindly interest he takes in the Institute by coming among them in the most unostentatious manner, and taking the chair at their meetings. Mr. Cockerell was elected president on the retirement of the noble earl. After alluding to the existing contest in reference to the Classic and Gothic styles of architecture, Mr. Tite, anxious that architecture should flourish and take the place it was entitled to assume in the great community of Art in England, appealed to his professional brethren to sink minor differences of opinion, and to aim at attaining that great object.

The toast was drunk with acclamation.

Mr. Digby Wyatt, as one of the vice-presidents, said,—Happily, the study and practice of architecture was not exactly like the function of defending "hearths and homes:" its business was to make them, and therefore it was entitled to a niche in all our hearts. In the further course of his remarks, he maintained that architec-

ture was now walking hand-in-hand with the intellectual developments of the day. The Royal Society (the president, of course, did not forget that Wren was an early member of it) was spoken for by Dr. Whewell; and Sir Charles Eastlake, Lord Talbot de Malahide, and Sir Roderick Murchison, replied to the toasts of "The Royal Academy," "The Society of Antiquaries," and "The Royal Geographical Society."

The following is a list of those who were present:—The Lord Mayor, Lord Talbot de Malahide, the Hon. William Cowper, M.P., Sir Roderick Murchison, Sir Charles Eastlake, Mr. Kennard, M.P., Mr. Moffatt, M.P., Mr. Ayrton, M.P., the Master of Trinity, Mr. Dilke, the Rev. R. Burgess, Mr. Du Chaillu, Mr. Landseer, R.A., Mr. Knight, R.A., Mr. Frazer, Mr. Sampson, Mr. Smee, Mr. E. Barry, Mr. Smirke, R.A., Mr. Godwin, Mr. Kerr, Mr. Currey, Mr. Jos. Clarke, Mr. P. C. Hardwick, Mr. Thoms, Mr. Whichcord, Mr. Ashpitel, Mr. Mair, Mr. Vardon, Mr. M. D. Wyatt, Mr. Burnell, Mr. Prestwich, Mr. Clifton, Mr. Bonham Carter, Mr. Austin, Mr. Thwaites, Mr. G. Vulliamy, Mr. H. Ashton, Mr. C. Barry, Mr. J. Bell, Mr. Boulnois, Mr. D. Brandon, Mr. Cates, Mr. W. L. Donaldson, Mr. Edmeston, Mr. Fergusson, Mr. Ferrey, Mr. C. Fowler, Mr. Francis, Mr. Garling, Mr. Gibson, Mr. Hansard, Mr. Haywood, Mr. Jennings, Mr. H. Jones, Mr. Lamb, Mr. Leicester, Mr. Hayter Lewis, Mr. Marrable, Mr. Mayhew, Mr. Nelson, Mr. Newton, Mr. Norton, Mr. J. Papworth, Mr. W. Papworth, Mr. Pennethorne, Mr. Porter, Mr. Scoles, Mr. Slater, Mr. Roger Smith, Mr. Stevens, Mr. Street, Mr. Waring, Mr. S. Wood, Mr. Woodthorpe, Mr. Penrose, &c., &c.

ARCHITECTURAL ASSOCIATION.

THE concluding ordinary meeting of members for the present session was held on Friday evening last, at the House, in Conduit-street; Mr. T. Roger Smith, president, in the chair.

The Chairman acknowledged, on behalf of the Association, a donation from Mr. E. L. Paraire, consisting of a set of perspective models, and a work explanatory of them, entitled "Perspective Practically Explained."

Mr. A. Smith (hon. sec.), having announced that the registrarship was now in the hands of Mr. Moody, at the rooms in Conduit-street; to whom all applications from employers and assistants should be made;

The list of names of officers of the Association submitted to the last meeting was then considered, and the following gentlemen were elected for the year 1861-2:—President, Mr. A. W. Blomfield, M.A.; Vice-President, Mr. Thomas Blashill; Ordinary Members of Committee, Messrs. W. Gritten, C. H. F. Lewes, G. B. New, E. L. Paraire, J. W. Walter, E. Wimbridge, R. O. Harries, J. A. Bunker, E. J. Tarver, H. A. Reeves; Honorary Treasurer, Mr. Arthur Smith; Honorary Solicitor, Mr. Francis Truefitt; Auditors, Messrs. S. C. Rogers and J. W. Penfold; Curators, Messrs. C. H. F. Lewes and R. O. Harris; Honorary Secretaries, Messrs. Arthur Smith and C. J. Adam.

Mr. Harris called attention to the state of the modelling class, and suggested whether it might not be continued during the recess; but the suggestion did not meet with the approval of the meeting. The progress of the class was said to be very satisfactory.

The Chairman then referred to the report of the examination committee which had just been made to the council of the Royal Institute of British Architects on the subject of the proposed examinations, and recommended the members of the Association to study the document, and to prepare themselves for examination on the first opportunity. He had no doubt whatever, if they would do so, many of their members would pass with honour to themselves, and reflect credit on the Association. He did not think that in presenting themselves for examination they would be expected to know more than young men in their position might fairly be supposed to do, who had used the means of education at their command. With regard to the other examination for honourable distinction, it would be of a more extended character; and some gentlemen might not feel themselves prepared at that moment to present themselves to the examiners; but he had no doubt that many of the members of the Association would present themselves at the first favourable opportunity, and pass through the ordeal with credit.

Mr. A. Allom said he must own that to some extent his feeling was against voluntary examination at all, because he feared it would not be as successful as it ought to be. His reason for arriving at this conclusion was, that young architects of the present day were not educated in that careful manner that would enable them to pass such an examination with *éclat*. It was, however, he thought, judicious, on the part of the committee, to recommend the number of marks to be lessened at the first ordinary examination; so that young men might be induced to present themselves who would otherwise be deterred from doing so.

Mr. Adams proposed that during the recess the committee should consider what should be the subject for Mr. Tite's prize, and proposed that they should make a report at the commencement of the session, suggesting three subjects, which should be discussed by the general body, and one eventually decided upon, so that three months might be given for preparation.

This was agreed to.

On the motion of Mr. Harris, Mr. T. R. Smith, Mr. Blomfield, Mr. A. Allom, and Mr. Blashill, were appointed judges of the Association prizes for an essay on street architecture, and for the best sketch in the class of design.

The Chairman, in taking leave of the Association as president for the past session, referred in appropriate terms to the satisfaction which he had derived from its progress, and expressed a hope that the members would continue in their desire for self-improvement. Notwithstanding the difficulties with which the Association had had to contend, it had effected much good, and he believed that it would prove a useful agent in the acquirement of professional knowledge. In conclusion, he thanked the members for the manner in which they had supported him during his year of office.

The officers of the class of design were next appointed; and, after some complimentary votes had been passed, the meeting separated.

LIVERPOOL ARCHITECTURAL SOCIETY.

THE scene of the annual excursion of this Society, on the 22nd ult., was Hawarden Castle, Flintshire, when about forty members, in the face of threatening weather, crossed over to Tranmere, and proceeded by two of the Liverpool Omnibus Company's 'buses towards Queen's Ferry, on the Dee. On leaving Tranmere the weather cleared up, and the tourists were during the remainder of the day gladdened by continued sunshine. Arrived at the Queen's Ferry, eight horses, two 'buses, and all the passengers crossed over the river in one large boat. The utility of such a ferry is patent to all those who have used it, and the Liverpool people hope a similar system will be before long in use on the Mersey, between Liverpool and Birkenhead. From the Hawarden Castle Hotel the Society proceeded to Hawarden Church, which is situate on a considerably elevated plateau, sloping down towards the east end of the village. About three years ago the edifice was nearly destroyed by a fire, which was the work of an incendiary, but it has been since restored. under the superintendence of Mr. Scott. The other objects of interest in the excursion were to have embraced the Buckley Brickworks, Messrs. Whalley, Burrows, & Fenton's Wire Rope and Telegraph Cable Works, and, lastly, the old ruins of Enloe Castle, near which, in a deep defile, Henry II. suffered a severe defeat in one of his wars against the Welsh, who attacked his army in front and rear after having drawn the troops into the trap. These various places could not be visited, as the time was limited; but the visitors were accompanied by Sir Stephen Glynne and the Rev. Rector to Hawarden Castle, which stands in the magnificent park at the east end of the village. The mansion of Sir Stephen Glynne was first viewed. It was erected in 1752, and remodelled in 1809, in the style of the thirteenth century. Surrounding it are some giant forest trees.

The ruins of the old castle stand on a high hill commanding a fine view of the surrounding country, including Enloe Castle. The remains are said to be of the Edwardian period; but it is believed that a castle existed on the spot before the Norman Conquest. It is, however, authentically known that in 1282 the castle was taken by surprise by Llewellyn, the last of the Welsh princes; and it was subsequently granted by Henry VI. to Sir Thomes Stanley, in whose family it remained until the death of the Earl of Derby at the battle of Worcester, in 1651; when it was purchased by Sergeant Glynne, of Cromwellian celebrity. Since that time it has remained in the possession of the Glynne family.

It was now four o'clock, and the hour for dinner had arrived. From Aston the section went across the country again to Queen's Ferry, where the party once more became consolidated at the Hawarden Castle Hotel; and if it be true that "a good dinner sharpens the wit while it softens the heart," then indeed must "mine host" have succeeded in making his guests very sharp wits and very soft-hearted, for everybody was delighted with the repast.

The chair was occupied by Mr. J. M. Hay, the president of the Society, who had Sir Stephen Glynne on his right, and the Rev. Rector Glynne on his left. The vice-chair was filled by Mr. Stubbs, who was supported by Mr. Robert Rawlinson and Mr. Fenton. The cloth having been drawn, and grace said by the Rev. Rector Glynne, the usual loyal and patriotic toasts were given from the chair.

The health of the hon. secretary, Mr. W. H. Picton, was most cordially drunk, and the last toast—that of "The Ladies," was proposed in a felicitous speech by Mr. Hardy Hay, and responded to by Mr. Doyle.

The 'buses were again brought into requisition, and the party reached home again shortly before midnight, well pleased with their excursion.

THE MERCHANT SEAMEN'S ORPHAN ASYLUM, SNARESBROOK.

THE foundation stone of this asylum has been laid by His Royal Highness, the Prince Consort. The weather was fair, and the inhabitants of the district made quite a gala day of the occasion. A triumphal arch was erected in honour of the Prince near the railway station, and a pavilion which was crowded by 1,000 persons covered the site of the stone; after the laying of which, and a brief reply by His Royal Highness to an address by the honorary secretary, the ladies who had collected subscriptions deposited their purses on the stone, and in a brief space a little hillock of offerings had been raised. Lady Morrison laid down a neat little purse, containing 1,000 guineas.

THE WESTERN COLLEGE, PLYMOUTH.

THIS institution was founded in 1752, for the education of young men for the Congregational ministry, and is the oldest college connected with this denomination. The new building, the foundation stone of which was laid about fifteen months ago, was formally opened on Wednesday, the 19th of June, in the presence of a large concourse of persons.

The building is in the Geometric Pointed style; and is, for the most part, erected of dark Devonshire limestone, with Bath stone dressings, and having string courses, capitals, and spandrils, enriched with carving from natural foliage. The central feature of the structure is an apsidal projection from the south façade; which, on the ground-floor, includes an open porch, having three arched openings; and which forms, above, the south end of the library, pierced by three two-light windows, having double middle shafts. This central part is surmounted by a high-pitched roof, surrounded at the base by a freestone parapet, intended at some future time to be carved. Through the porch, which has steps and pavement of granite, we enter the hall, 20 feet 3 inches by 18 feet, on either side of which are eight students' studies and a lecture-room, 18 feet 6 inches by 16 feet. In the rear are the refectory, 23 feet by 16 feet, housekeeper's apartments, kitchens, &c. The floor of the hall is laid with encaustic tiles; and at the north end, directly opposite the entrance-doorway, is an open freestone screen, on which are incised the dates of the foundation of the college and the erection of the new building; and above the inscriptions, on scrolls, "Thy kingdom come," and "Thy will be done." A broad flight of Portland stone steps leads from the hall to the first-floor apartments. In the centre is a library, 40 feet 6 inches by 18 feet, with open-timbered roof, and having at the north end a gallery. The room is fitted with bookshelves all round, and is furnished with table lectern and benches of appropriate character. The chairs, which are of oak, are of the "Glastonbury" pattern. The library is lighted at night by a handsome corona. On each side of the library is a lecture-room, 20 feet 3 inches by 18 feet 6 inches, and over the studies on the ground-floor are an equal number of dormitories. In the rear are the bed-rooms for servants, &c. At the west end of the college proper, and set back about 16 feet from the main front, is the resident professor's house.

The contract amount (not including fittings) was about 4,000*l*. The architect was Mr. Hine, Plymouth: the contractors were Messrs. Call & Pethick.

NEW STREET MESSENGERS AT BERLIN.

IN Berlin a successful experiment has been made by an enterprising individual who has just formed a brigade of Dienstmänner. These new soldiers of the public hold themselves in readiness for all kinds of service, such as carrying messages, letters, and performing commissions. In addition to the ordinary duties of street messengers, they also take upon themselves many of the smaller household duties, such as cleaning rooms, windows and doors, blacking boots, and making themselves generally useful. "These accomplishments," says the correspondent of the *Daily Telegraph*, "are so varied in all the thousand and one arts not already occupied by special handicrafts, that they may be said to range from the fourth hand at whist, or fourteenth place at the dinner-table, to the hoisting of heavy woolsacks or bringing home the Sunday's dinner from the bakehouse."

There is nothing, perhaps, very novel in this extensive range of the Dienstmän's activity, but the one point deserving of all credit lies in the fact of the public not having to deal with the individual, but with a company, who guarantees the honesty and good character of each of its servants, and also dispenses with the hitherto invariable accompaniments of similar transactions by the arrangement of a minute and comprehensive tariff, exhausting in its catalogue the list of possible services. Not only is the general behaviour of the commissionnaires vouched for by the proprietors; but, as in each case the Dienstmän has to give a numbered ticket to his temporary employer, the latter is in a condition to claim compensation for every article lost or damaged by negligence or misconduct.

By these tickets, which vary according to the duty performed and its place in the tariff, an effective check is also placed in the hands of the proprietors, serving to control the casual income of the day. The men are in the receipt of a regular pay of twelve thalers a month, and have, consequently, no further interest in the monetary returns; though, no doubt, many occasions arise when the generosity of the employer steps beyond the strict limits of the scale. The tariff itself comprehends many varieties of payment, including time, distance, and other special arrangements, and is in every respect very moderate in its charges. For the whole day the services of a Dienstmän may be secured for two shillings; for an hour or less, about threepence; for a short distance, not exceeding a mile, a groschen (something more than a penny) is charged. In the case of a longer journey, the messenger may have recourse to a map of Berlin, with which he is furnished by the company; and the distance is determined by a small foot-rule, which he also carries on his person. The uniform of each man consists of a simple blouse, with fustian trousers, a kind of Austrian cap, carrying a brass plate with the inscription "Dienstmän," and his respective number. The new institution is already a success, and, from the original brigade of less than 100 messengers, has increased, until there are now four companies in the field, employing upwards of 1,500 men.

THE NEW BRIDGE OVER THE RHINE AT KEHL.

THE bridge which crosses the Rhine at Kehl forms part of the railway between Strasbourg and that town,—between France and Germany, in fact,—and has been completed for the company of the "*Chemins de Fer de l'Est*," and the administration of the Grand Duchy of Baden, in the short space of thirty months, notwithstanding many difficulties, both diplomatic and local. In placing before our readers a view of the bridge and a diagram illustrating the mode adopted for constructing the piers (for which, probably, less praise on the score of originality will be awarded in this country than has been claimed for it abroad), we avail ourselves of a memoir published in the *Illustration de Bade*, to give full particulars of the undertaking.

The junction of the French railway with the Grand Duchy of Baden line commences at the Strasbourg station, and the former borrows about 3,500 yards of way from the Basle and Strasbourg line. At Königshofen the road curves, and proceeds to the Rhine, after passing successively Mühlbach, L'Ill, the Rhone-and-Rhine Canal, the windings of the Rhine, Ziegelwasser, and the Little Rhine. Finally it terminates at the bridge over the Rhine, crossing the imperial road of Germany by a viaduct, near to the monument raised by the army of the Rhine to Desaix, in 1806.

By the imperial decree of April 20, 1854, the construction of the line between Strasbourg and Kehl was conceded to the *Compagnie de Chemins de Fer de l'Est*; but it was not till July, 1857, that an international convention, signed by the representatives of France and the Grand Duchy of Baden, permitted the preliminary investigation to be made relative to the construction of the bridge over the Rhine, and the completion of the line between the two stations. In September of the same year, the international commission held its first meeting at Strasbourg.

The decree of the 20th of April went to the suppression of the bridge of boats which forms the continuation of the main road. A portion of the double line of railroad was to be reserved for carriages. Upon this the diplomacy of the right bank set its veto. The result of this opposition was the maintenance of the bridge of boats, and the establishing of a swing-bridge on each of the banks, 26 mètres in span, and 36 mètres in swing, with a balance end of the same length. These swing-bridges will only be fully understood when the steam navigation, which now ceases at Mannheim, shall have installed itself on the Upper Rhine. This exigence of the Diet of Frankfort has damaged the appearance of the work, and interfered seriously with the budgets of the administration.

A whole year was devoted to studying and discussing the plans. The result of the deliberations of the commission was to give the construction of the foundations to the company *de l'Est*, and the works of the superstructure, including the fixed portion of the road, the swing-bridges, and the entrances, to the Duchy. Mr. Fleur St. Denis, engineer, was charged with the execution of the foundations, under the direction of Mr. Vuigner, the company's engineer-in-chief; and Mr. de Kageneck was charged with the execution of the upper part, under the direction of Mr. Keller, of the *ponts et chaussées*.

The works of the foundation were commenced, September 15, 1858. Grave events made the abandonment of the enterprise to be feared in the following year, but the company put aside all apprehension, and redoubled its activity during this doubtful period. The work was vigorously pursued. Great difficulties presented themselves. It was necessary to provide against the washing away of the stony bed of the river. An idea may be formed of the force to be counteracted, when it is remembered that the enormous body of water moves here sometimes with a rapidity of 300 mètres a minute. It was, therefore, decided, that the foundations of the piers should not be laid at a less depth than 15 mètres below the deepest known water; but on examination it was found that no solid base for such heavy constructions could be obtained at a less depth than 20 mètres.

The commissioners had determined to employ the compressed air system in laying the foundations, originated by Mr. Tigrer, who had employed it in sinking shafts for mining, and which had procured for its author, in 1853, the great prize for mechanics at the Institut Impérial des Sciences. Nevertheless, this decision of the commissioners was not altogether obligatory; the French engineers were left at liberty to adopt any other system that appeared to them preferable.

Mr. Fleur St. Denis, engineer of the Compagnie de l'Est, after having carefully studied various systems, and that of Mr. Tigrer more particularly, adopted a mode of his own, having, however, the use of compressed air for its starting-point. His system had the additional advantage of a considerable saving in time.

According to Tigrer's method, thirty tubes would have been required for the piers. Mr. Fleur St. Denis substitutes for the tubes one single caisson for each pier: in this consists his invention.

Messrs. Vuigner & Keller, the engineers-in-chief, adopted Mr. Fleur St. Denis's system, and associated themselves with it completely by taking part of the responsibility. The caisson employed is a sort of parallelopipedon, closed above and open below, constructed of wrought-iron plates one centimètre in thickness, and weighing 140,000 kilogrammes.

Some extracts from an account given by a correspondent of *L'Illustration de Paris*, of a subaqueous journey made by him, will aid in conveying an idea of the works.

The iron caissons, open below, descend into the water, which they disperse by means of the compressed air contained within their sides. Within these caissons a dredge raises the gravel, and makes a funnel, at the same time that workmen, placed along the sides of the caisson, second its efforts. Thus, a pit is formed, continually deepening beneath the tooth of the dredge and the shovels of the workmen. The caisson penetrates into these abysses, carrying on its back a block of masonry, which is supported above the water in such a manner that the whole mass descends slowly. Arrived at the specified distance, the works stop; the dredge and the men rest from their long labours; concrete is poured into the sides of the iron chambers, and thus rises in the middle of the river a large column of masonry, iron, and concrete, forming one piece, and standing like a monolith in the midst of the beds of gravel which it has traversed.

The execution of the various portions of the work, conducted by Messrs. Joyant & Defranc, was not accomplished without the difficulties that always attend such an undertaking. When the caissons, plunged into water, received the first discharges of air from the pump, they trembled in the water, and then rose to the surface like balloons: supported as they were by the compressed air, their own immense weight, and the masonry which they carried, were alike incapable of resisting its powerful action. And after this commencement, what unlooked-for obstacles, what ever-growing difficulties! At one time a flood of the Rhine, which threatens to sweep away in a moment the fruit of several weeks of toil; anon, chains break, and dredge cylinders choke up; and then, workmen habited as divers, are forced to descend between the sides to raise, with immense labour, links of chain tangled into knots of iron.

There are also unforeseen manifestations of a little-known and rebellious element. The caissons descend; the air pumped into them is not able to drive away the water that surrounds their feet; and yet, by sudden jerks, it precipitates itself outside, and mounts up the whole length of the iron sides, discharging itself between the caissons with a horrible noise that awakens all the echoes of the subterranean caverns. Or, again, the physiological effects of compressed air combine against the workmen, and sorely tax all the ingenuity and watchfulness of the engineers, and their self-devotion to the same perils as their men undergo. They must pay with the risk of their lives for their want of knowledge of their new enemy.

The drawing we give presents a section of different portions of a work which it is difficult to describe in detail. The pier which is formed in the Rhine is, in the drawing, only seen in front, 7 metres broad, but its length is 23 metres; and the caisson which our drawing shows is only the first of a row of caissons of which each is pierced with the dredge-cylinder in the centre, and two cylinders for descent.

The men working in the caissons, placed one behind the other, are sixty in number.

On the floor of the upper platform of the pier is shown the arrangement required to effect the descent of each caisson.

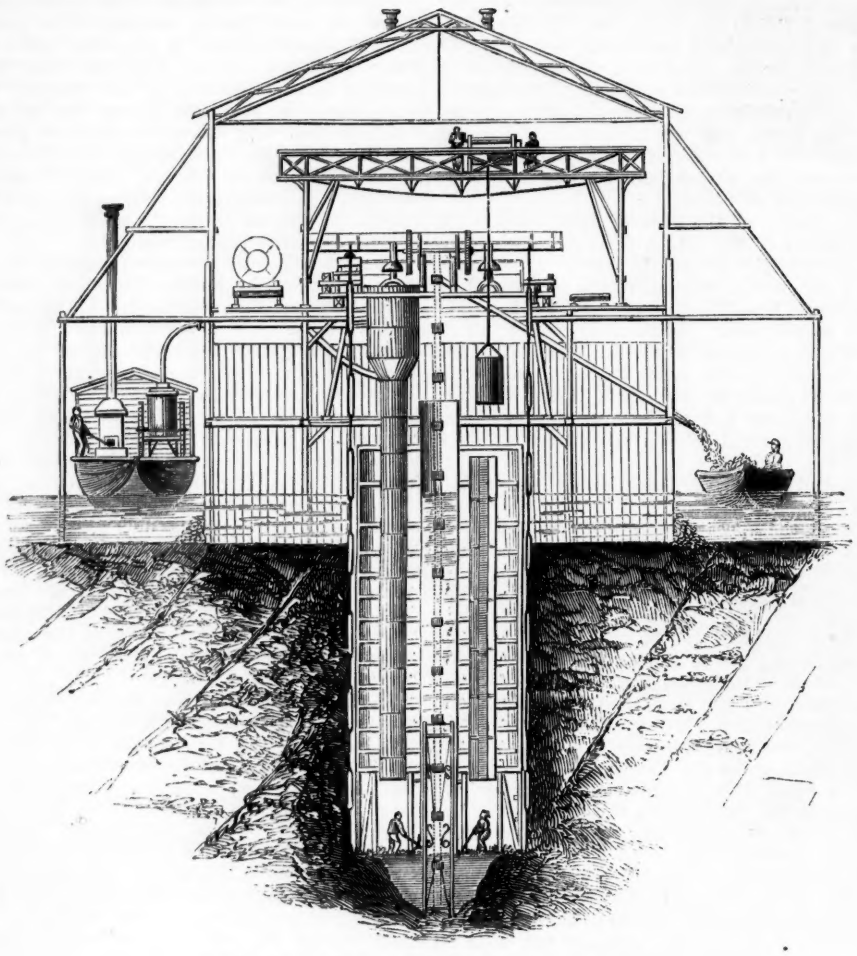
Each of the four dredges empties its buckets by an iron conduit into a barge close to the side of the pier; and the eight cylinders of descent give passage to the workmen and to the materials that are sent down into the bottom of the caisson to fill it up as a solid block.

On the lower platform is carried on all the mason's work of the pier, on which masses of granite are fixed, covered at their base by the water, but rising 7 metres above it, and bearing the bridge.

To the left of the pier are seen the boats which bear the air-pumps; flexible caoutchouc tubes allow of the oscillation of the boats, and are bound to fixed copper tubes, which join on to the cylinders of descent.

One who had made a descent to the bed of the Rhine during the last few days of the work says, —A few strokes of a hammer on the cylinder was the signal, and a valve or clack opening (which allowed the condensed air to escape with a sharp whistle), gave admission into a little dark chamber, lighted by a small round hole, dignified with the title of a door. We descend by a ladder, and the clack closes after us. While we lighted our candles, communication with the tubes of the air-pump was established. The pressure on the tympanum of the ear caused extreme pain, and sharp neuralgic twinges encircled the forehead, and pressed like a gimlet behind the temples and into the cavities of the brain.

Fortunately for me, I remembered the method of counteracting this evil, and of re-establishing the equilibrium between the outer higher pressure of air and that less compressed which was contained within the ear. This was by taking a long inspiration and swallowing at the same time.



THE RHINE BRIDGE AT KEHL.

Section of Caisson for Construction of Piers.

Gradually I felt relieved; the tingling in my ear ceased, and I could once more hear the conversation of the workmen. I repeated this mechanical operation each time that the external pressure, which continued to increase, exceeded that of the air I had taken in; and when at last the equilibrium was established, I no longer experienced these painful sensations.

Presently a door opens at our feet, and the eye endeavours, but in vain, to penetrate the black darkness of the long tube below. The guides beg of each visitor to hold fast by the ladders, which descend vertically into the abyss. We cling closely to the wet bars of the iron ladder, and descend under a fine cold rain, that distils upon our faces, moist with perspiration, while our feet are seeking for their next resting-perch, and the hand dreads to let go its hold of its slippery support. One thing is imperative—not to miss the footstep: the fall would be terrible. One offers up prayers for the safety of one's companions as well as of oneself. If one of those above you missed his footing, the weight of his body would infallibly drag you down also. The descent lasts four or five minutes; eighty-five steps bring you to the bottom.

At first the eye can scarcely distinguish anything beyond the flickering ray of the candle. Nevertheless, one of our party, inspired with a feeling of relative comfort, unhoped for in these regions, impulsively exclaimed—'Here we are, like fish in a river.' Scarcely had he uttered the words, but he would fain have recalled them. He had forgotten the workmen who are obliged to pursue a painful task of several hours' duration in these dismal depths. Looking around more attentively, we were at length able to perceive, in the dark corners of the caisson, men half hidden by the scaffolding, handling the shovel, bent down, and with their feet in the water. Thus, in this atmosphere of triple pressure, which alone is sufficient to cause congestion in less strong constitutions, the men work on for three hours at a stretch, the head bent down, and the feet chilled by the waters of the Rhine.

Bravely do they endure these painful toils, and little time have they for meditating over them. For myself, I was drawn from my philanthropic musings by a shout of laughter from my companions, who had all at once made a discovery that any one of us might have perceived long before, in the air-chamber. Under the effect of atmospheric pressure the voice changes singularly: one speaks no longer with the mouth, but through the nose; the most pure organ accentuates each word in the strangest manner. One of us, an advocate who piques himself on speaking elegantly, was explaining the theory of the Rhine works just as if he himself were a skilled engineer, to our guide, Mr. Hersant, who, with the utmost politeness, listened to him most patiently. In the excitement of his subject he did not notice the peculiar accent which changed every one of his words, and when he had run the whole gamut of this nasal chanting, and was arrived at the end of his phrases, instead of the mark of consideration which he anticipated from his audience, he was greeted by a general roar of merriment, which, under this sonorous vault, drowned for a moment with its hoarse sounds the noise of the dredge and the splashing of the water.

But now a chilly damp began to take hold of us. The temperature is some degrees lower in the bottom of the caisson than in the upper chamber of the cylinder. This depression, produced by the water of the Rhine surrounding the sides of this compartment, plunged, as it were, in a well, becomes very perceptible to the visitor, who, a moment previously, was covered with perspiration. The signal of departure is quickly given, and we ascend, not however before each one of us has picked up his little pebble from the bed of the Rhine. It reminded me of those travellers who never resign themselves to quit a cathedral, or any other monument they may be visiting, without breaking off some portion of stone, which they transmit to their grandsons as a memento of their journey.*

The ascent is made more rapidly than the descent, and the entrance chamber is again reached. Arrived at the top of the ladders, not the slightest fatigue or stifling sensation is felt. Breathing is accomplished slowly, and with a sort of voluptuous sensation that renders it a delight. It seems as if the chest were distended and swelled out like a cuirass. One longs to have this feeling last for ever, that one might always breathe with such well-filled lungs; even were one condemned to live in an atmosphere charged with dust and soot, it seems as if it were possible to resign oneself cheerfully to that. But we are obliged to go out, and here recommence the traveller's tribulations.

The under-valve is closed, and that which gives passage to the compressed air in the chamber slowly opened; and this by degrees puts the respiration on an equality with the external atmosphere.

The sharp whistle of the air which is escaping with great speed, again distresses the ears; an abundant perspiration breaks forth all over the body, the effect of rapid respiration caused by the absorption of a triple quantity of oxygen. Suddenly a freezing cold seizes you: the air, in escaping, lets fall upon you the watery vapour with which it was charged; a fog, thicker than any you have ever experienced on the borders of the Rhine, envelops you, and hides your companions from your sight; and scarcely is the candle you carry in your hand perceptible to you. Again the singing in your ears occurs, you breathe with the mouth wide open, striving to drink in the air, which rarifies and eludes you.

At length the interior atmosphere of the chamber is equalized with the exterior; the valve opens, you ascend, throw an enraptured glance on the Rhine scenery around;" and here we must leave our eye-witness.

The works were materially advanced by the employment of a steam-hammer, intended for the driving of piles. Our authority, of Baden, of course does what he can to lessen the credit due to Mr. Nasmyth for this invention, but without much effect. We must pass on, however, to give a few statistics.

The first pier of the Kehl bridge—that nearest to the French border—commenced the 22nd of March, 1859, was finished on the 28th of May, after sixty-eight days' labour. The second, on the Baden side, was concluded in thirty-five days. The third occupied only twenty-nine days; and the fourth but twenty-six.

While the piles were being driven, 250 Baden workmen were forming the trelliswork of the roadway. All the iron was furnished by the factory at Creuzol. The metal works were established on the French bank. Each of the beams of which the trellis is formed is six metres high. These large solid pieces are bound together by rivets driven in red hot; 150,000 of these rivets being used. The trellis-roadway was constructed by the Messrs. Benckisser, of Pforzheim. It is 177 metres long, and represents a weight of 1,200,000 kilos.

The most interesting portion of the whole operation was, decidedly, the bringing into position of this enormous cage. From the dock on the French side, where it was put together, it was pushed on to the piers by a horizontal movement, and with the help of a series of cylinders each turning on its own axis. The operation commenced on the 8th of September, 1860, under the orders of Mr. de Kageneck, engineer, and the direction of Mr. Keller. The average progress was 30 to 40 mètres a day. To facilitate matters still more, the engineers adopted a sort of fore-arm (an adjunct of 20 mètres in length), which enabled them to span the interval of 60 mètres between the various piers without constructing intermediary scaffolding.

On the 22nd of September this large construction was placed upon the piers. The exploit was saluted by loud acclamations from the spectators on the river side. The French flag floated on the left bank, and facing it were the colours of Baden.

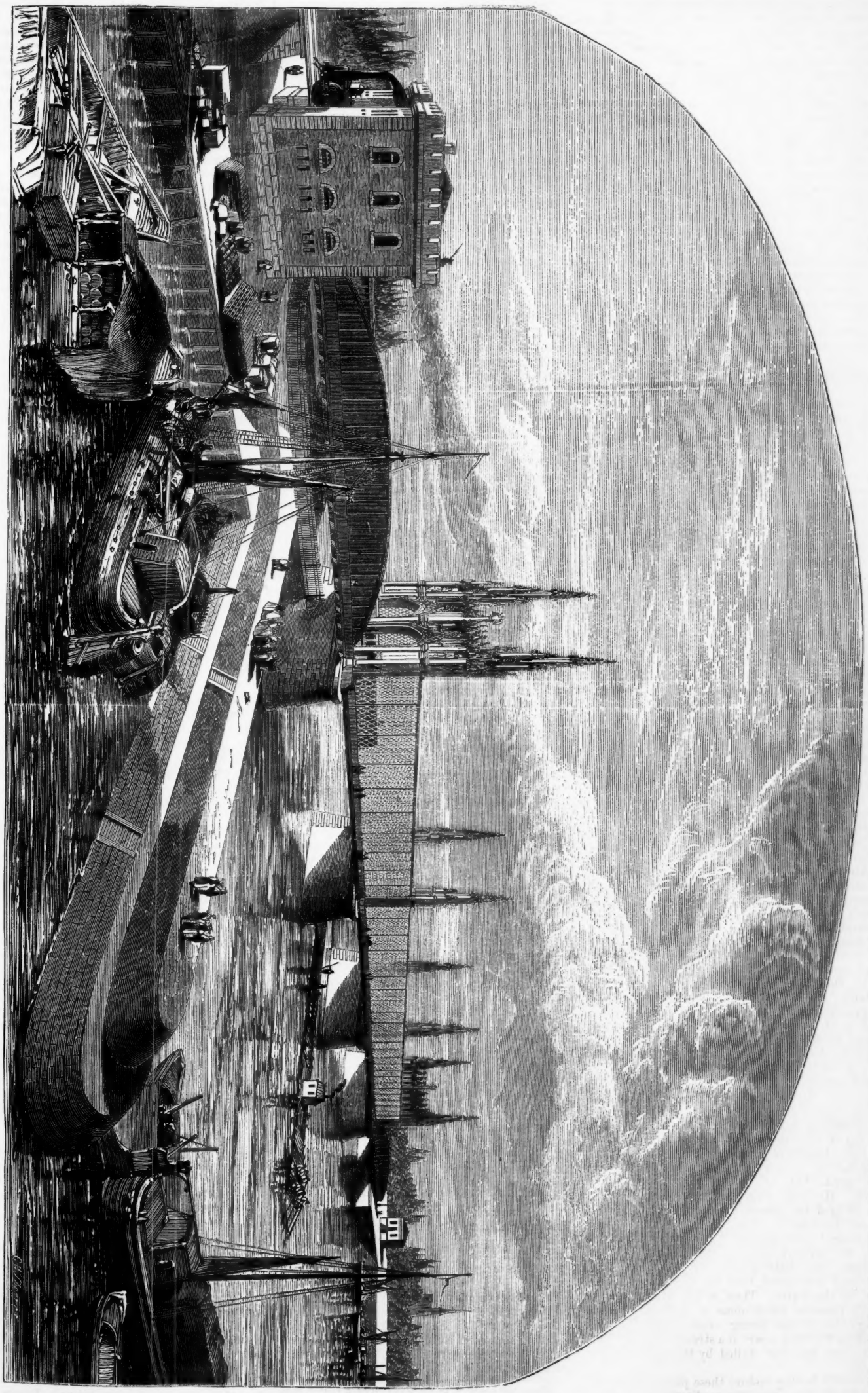
From this time the concluding labours were energetically carried on. The swing-bridges, brought to the barge heads, took their station each upon its pivot. These are from the French factory of Graffenstadten. Each bridge weighs 250,000 kilogrammes.

From the same factory were obtained the caissons used in forming the piers.

On the 11th of March, 1861, experiments were commenced for testing the bridge, and all proved very satisfactory.

A commemorative stone has been inserted in the pier nearest the shore on each side of the river. It is a mass of granite, on which are cut the names of the sovereigns and of the functionaries under the reign and administration of whom this work has been brought to its successful termination. Eight millions of francs have been laid out to place this solid act of union between France and Germany.

* A very bad practice, by the way; for each visitor, thus indulging his own selfish wish, renders the monument less beautiful for those who come after him.



NEW BRIDGE OVER THE RHINE AT KEHL.

ORIGINALITY OF STYLE.*

LET us imagine ourselves meeting early in the present century instead of now, and try to fancy the kind of inquiries that might be engaging our attention. Many questions, important then, have been set at rest for ever, and this that brings us here now was not then urgent. We should be following enthusiastically after everything Greek in the good company of those who are now passing out of our high places in age and honour. The Greek style was to supersede the Roman, and be itself superseded by the Italian and the Gothic. The bulk of the materials that go to form the basis of our present practice were to be accumulated or revised. The chief monuments of ancient cities were to be copied carefully and set up in our towns, familiarizing us with the best examples of classical art, which few of us could travel to see, and which books could very imperfectly teach.

It would be unmanly to turn away from the pioneers of this good work, who carried it on with such ardour and learning, to a subject so different in kind, in a sense so opposite, but in no degree hostile, without recognizing that we owe it to them that we are in a position to turn to it at all, and it is their labours that have hurried us into other times. In our own day we neglect these matters a little, perhaps; there is much work to be done in investigating the history and characteristics of the Mediæval style, something to be done for present exigence; for, however indifferent it may be to the rest of the world, it is necessary to us that we live—and even a generation of thinkers cannot be thinking of everything at once. The styles of our own country have been imitated with much success; we are rapidly getting to understand them better by study of contemporary foreign examples, and much that is valuable in the age of Romanesque.

Nothing could be more unwise than to check prematurely this line of action; but, even now, it is becoming of prime importance that we think of our future course, understanding the causes that lead to the formation of styles, and will influence our progress, by our own permission, or, if necessary, in spite of our resistance. I will not pretend to be able myself to go very deeply into this question; but you will form some idea of the spirit of the remarks that follow from the title by which I have strung them together. It will be getting rid of a couple of hard words which somehow always rise up when we start a question of this kind. If I disclaim all connection with anything of a "transcendental" or "utopian" character, there is plenty of good substance to be dealt with, and we will have nothing to do with shadow.

The word "originality" is generally used as a term of praise; and, in selecting it for my present purpose, I intend it to mean, "the healthy exercise of invention in architecture." We are likely to misapprehend the nature of originality from a wrong idea of the terms "change" and "permanence," and to imagine that it is natural for things to be fixed, and exceptional for them to vary. So far is this from being the fact, that one might almost say that change is the only fixed principle, and anything pretending to permanence is an innovation and an anomaly. It is not wonderful that the revival of classical architecture should have led men to suppose they could extract out of it, or compose from it, certain perfect specimens, which, being acknowledged to be the best that could be contrived, should be received contentedly as precedents for the rest of time. That was perhaps the first false application of the principle of finality that was quite unconnected with superstitious motives. We are generally of opinion, now that the results have been such as to make us thankful that the efforts which have been made to introduce it into the Gothic styles have not met with success.

At first sight one might suppose it reasonable to contrive out of old examples, certain arrangements of design, which, being right once, should be right for ever. The mistake of attempting to keep a thing fixed while the rest of the world is moving, is twofold. One of the first things we learn at school is, that there are three tenses, past, present, and future. By stripping from a thing all record of the changes which time has wrought upon it, and the influence of different minds, and making it a thing of the present, you deprive it of history; by fixing it as a thing perfect and complete, you take the life out of it, and deprive it of hope. It is possible to see this very distinctly if we compare the impressions we shall gain of classical architecture according as we study it by one or other of two methods: we may study it, if we will, by the royal road of the five orders. For those who wish to do a thing in a business-like way, without much trouble, or strain on the imagination, this course is to be recommended. You get five interesting diagrams, which you know have been most carefully and diligently compiled and purified, and may be really the best central ideas of the orders they profess to represent. Perfection, if such a thing can exist, has been attained, and you enter easily in a few weeks on the fruits of other men's labours,—perhaps the ceremony is about as interesting as so many sums in the rule of three. Our law-makers have thought it necessary to prevent the past and present from tyrannizing over the future by preventing a testator from tying up his property for more than thirty years; in the five orders architecture might be said to be tied up in five bundles for ever.

The other method of study may be called the historical method. We can imagine the surprise of a student on learning for the first time that the five orders are modern embalmments of that which was with the Greeks and Romans a living thing; that they were weak mortals like ourselves, whose art began rudely, and rose to its highest point slowly; grew luxurious and declined; had merits in its youth and simplicity that it lost when it grew older and richer; how it varied continually through many centuries, and expressed in its changes the varying moods, manners, power and splendour of two nations. The subject is immediately invested with a new interest, and we feel in the life which is in it, its alternations of truth, error, and repentance, a sympathy that the cold and pure, and perfect orders cannot excite. It seems for the first time that we have some interest of our own in the matter, that we might under pressure of circumstances venture to alter the size of a member the fraction of an inch; but then this follows, and nothing shows so clearly the great value of the classical styles, if one member is materially altered we must vary others, as they cease to accord with it; each member is as dependent on the others as the notes of a piece of music. The orders were so varied in the classical times, and might, if they suited our convenience, be varied similarly now. I suppose no musician ever professed to compose a centrally perfect piece of music; yet the sense with which he would have to deal being so much more exact than that of sight, one may suppose that the experiment would be tried under much more favourable circumstances. I very well remember the first architectural work that was placed in my hands; it was an attempt to reduce Gothic architecture to five orders, by Batty Langley, and was lent me by an accomplished architectural artist, who took an interest in me in those days, as a warning and an example "how not to do it." I know the thing seemed very reasonable at that time, and I could not understand why he should express such abhorrence and contempt. It is, perhaps, desirable that people would now and then compliment a youth of sixteen with reasons, or, at any rate, analogies, which may be more valuable than your reasons, for it is somewhat past the age when dogmatism begins to be distasteful. I admit that there are in all professions very many subjects which ought to be taught dogmatically: some professions are almost entirely composed of such; but the farther you get from technical matters and matters of history, the less is this principle advisable. It should, at any rate, be understood that, if a reason is not given, it is for want of time, and not because it is unnecessary. The difference caused on our minds by the two systems of teachings is, that in one case we look upon ancient examples as instruments for our use, in the other as shackles to bind us.

There is no question more important than that of the constitution of our perceptions, with reference to impressions from without. We should consider how much of antiquity and how much of novelty is good for us, and whether we are constituted for a system of torpor, or progress, or revolution. We have certain propensities towards change, and certain powers which enable us to produce it. The power of producing novelty is one of those which we most value as distinguishing us from the lower orders of animals, and bringing us nearer to the Producer of all things. Without inquiring how applicable the term "creative," and some others of like kind which we do not understand, is to so short a step in such a long journey, it will be useful to take lower ground, and see the order of things amongst which we live, from which we receive our impressions, and of which we form a part. We are so little accustomed to anything fixed that our travellers are startled and almost horrfied on entering the tombs of Egypt, which have stood still during all these centuries that the world has been moving. The poetry of everything is in its motion. The charm of astronomy is in the orderly progression of the heavenly bodies, and their intimate union and sympathy with each other. The charm of geology is in its gradual succession of events, and evidence of life and action. There is a fine analogy in this science which we ought not to miss, because it shows how little of shock, comparatively, and how much of quiet progress have assisted at the building of this great work upon which we build our little works. Down in the foundations of the world we find a state of things that has been changing continually since the commencement of vegetable and animal life. The whole system of creation has been renewed again and again; through long periods of progress, and rare periods of catastrophe, there have been dark ages and then *renaissance*; but it was renewing of life only, not of the lost style: new things arose under the new conditions, and we see in that history as clearly as in any I know the true type of our own originality.

It is essential to look for analogies in this direction, because, if there be such a thing as perfection or fixedness, it is in nature, if anywhere; and if such a thing is desirable, we can hardly expect to succeed where nature has failed. It is difficult to imagine the misery in which we should live if we were not formed to accept and enjoy a state of things in which change is a continual element, and feel a lively and healthy pleasure in turning from one object to another, and uniting our sympathies most closely with such as grow and progress as we do ourselves. It is difficult to imagine the state of our existence if we had not given to us the power and the propensity to adapt ourselves to altered conditions, and the power of producing new ones: it is a propensity that has woven itself into the thread of our life, and we cannot check its development nor force it violently without acting untruly to our proper instincts. We attach the most pleasant ideas to that word, "life:" it is freshness, growth, vigour, motion, progress, power in action and in reserve. We give all manner of hard names to its opposites, of the brood of stagnation. You may find them applied by bookfuls to the works of dead and flat periods in art. And perhaps the chief danger of the present day is, that the recoil from old restrictions will be too violent, and force us into the opposite extreme of convulsion, for which nature, except under special circumstances of restraint, has very little analogy. We may get a principle or two out of these and similar considerations, which we can all believe in whatever may be our favourite style. The first is, that the desire for change is as constant, and when not forced, as healthy a feeling as any we possess. The second is, that we have no reason to desire violent change, but must depend as much as possible on gradual progression. The third may be, that even such times as those through which we are now passing are better than listless times, as convulsion is more hopeful than lethargy.

I do not know what the originators of great styles thought about these things, but I rather think they would make little discussion about it, but do the thing they were impelled to do, and recognize no other system. Our civilization is more complicated, and our diseases different in kind. It ought reasonably to seem strange that we should have yet to establish, as a maxim, that each age must, if it will only think about the matter, judge best of what is best for itself—that we should now be balancing between the adoption of styles of different periods as a point from which to start afresh. With classic, active and vigorous, and anything but discouraged, and Gothic as lively and springy as one of its "good grotesques," if neither scale kicks the beam, we cannot dismiss all apprehension that it will kick the opposite one.

If an intelligent oculist were made suddenly aware of the position of the two parties who are amusing themselves in the "battle of the styles," his first impression must be that there was some difference in the construction of eyes that could be got at with the knife and the microscope; it seems at first sight so odd that so much difference should arise from what is so much more a question of education than of deep feeling. The recipe for making out of a youth of fifteen a Greek or a Goth may not be absolutely infallible; but put him in the right office, and with due precautions against external influences, the process is at least as certain as that by which we bring it to pass that a young tradesman shall spend his life soiling silks

* Read by Mr. T. Blashill, as mentioned in a previous number.

with his fingers, or his fingers with raisins. There must be some good reason why we have not now flourishing two styles of war-making, both after good ancient examples. Probably it is this—that men become earnest when their skins are in danger; they become less classical and more original. We must not force comparisons between things totally distinct, but the thing that has come down to us freshest from both Classical and Mediæval times, side by side with architecture, is this same war-making. Usually, before we know how to draw, we have dipped pretty deeply into fable and romance, and chosen our line of action between the rescue of distressed maidens and the contests of the Iliad. Our soldiers have their inspiration as we have ours,—down in Trafalgar-square we have just given honour to a hero—after our manner. One would like to know in what spirit he marched on Lucknow, and stratagized, and marched again through that awful season. He could not have forgotten altogether his schooling at Greyfriars, nor the legends that give vigour to the spirit, as exercise hardens the muscles. Yet it was not for being classical that we set him on that bad eminence, but because he had done his work as an Englishman, and we could place his originality by the side of ancient models without being ashamed.

We are no more Greeks nor Goths than was he, though it does not follow that we can safely forget their example. Yet it is impossible that we can very closely resemble either, and we may as well try to put back the hand of time through twenty centuries as five. The principle is the same in each case, and cannot be other than wrong. The idea of starting from a particular period of art, is, I fear, no less fallacious, though more plausible. We have tried most honestly during many years, to carry on the pure and beautiful style of the thirteenth century, with a result which nobody calls success. We are all now perhaps more or less pleased with many of the details which are being introduced into our own style from the early Gothic of France. It would have an effect upon our minds similar to that which would be produced by original conceptions, if we could forget that the store from which it is being drawn must soon be exhausted. There is no class of buildings that better deserve study than those of the Romanesque period; it is Gothic architecture in youth. And although we are very apt to talk about the vigour and freshness of anything that happens to be comparatively new to us, I am much mistaken if we do not draw much that is valuable from study of works of that period; but it is easy to see, I think, that some of the more advanced Gothic schools are running headlong into the same experiment that has failed so often before—this time under slightly different conditions. Satisfied of the hopelessness of the attempt to improve on the best period of Gothic, the idea now is to take up a style confessedly inferior, in the hope of refining it into a better kind of Gothic. I fear very much that this is a new version of the short and slovenly formula for providing scope for improvement—viz., to begin badly.

This question of the starting point is really the most important of any that arises just now,—it is at the very foundation of originality. I hope that nothing I say can be taken as advocating the idea that we can hope to be entirely new; we may as well expect to see some day a new creation rise up around us. The contest now to be decided is one between principles which are of far more importance than Gothic and Classic. We know perfectly well that every attempt to twist an old style into our modern ways has failed entirely. The style was not elastic, and it is only owing to the accident that our forms of worship have changed less than we ourselves have, that the Gothic style succeeds so well in that exceptional case. I ought to make partial exception of the Italian style, which, while it answers very well the demands of a wide range of purposes, has been very far from successful in exciting that sympathy and warmth of feeling which is necessary to raise the work of utilitarianism to the rank of art. If the question were,—Shall we continue sacrificing real convenience and utility, as we notoriously do daily, in deference to the demands of style; or shall we take convenience of construction and arrangement as our basis and sacrifice at whatever cost everything that cannot be modified so as to accord with it, we should be compelled to adopt the latter alternative. And indeed we must ultimately come to something as near to this as the ancients did, if we wish to equal them in the end. For the present we may be content to light the lamp of sacrifice more liberally than some of the extreme advocates of the constructional reform seem to admit.

We have existing within us counteracting to some extent the passion for progress, a strong leaning towards the past. We are influenced insensibly in every-day life by the views of old people. We do not trouble ourselves about logic, but from the respect we bear them we make their ideas our own. It is a right feeling, and carries the past into the present as we may hope to live in the future. That is the poetical view of it, and we must not rob our art of any portion of true poetry. The practical effect of it is that we have got another element to deal with besides scientific construction and abstract ideas of beauty, and can, if we like, put them altogether into one of those horrid tables such as one finds in Tredgold.

There is our knowledge of construction, and materials, and the demands of convenience. This may be called engineering, and is not an art, but a science. Then there is archæology, which is not art, but science. Lastly, our study of nature, which is the foundation of both art and science.

Our use of engineering may be called "common sense applied to building." Our use of the facts of archæological science may be called "common information applied to building." Our knowledge of the sentimental part of archæology leads to "common feeling applied to building."

There is room for those who have faith in statistics to fill up the table, and price them out, as we find a similar class of questions treated in the works of a gentleman, to whom we owe much; but here are elements by the right application of which we may escape being fantastic, and shall not fail to be original.

If I give my own opinion of one or two developments of so-called originality (to which I must ask you to attach just so much importance as you find due to it on quiet reflection), I would not be understood as alluding to their professed leaders; and this applies also to what I said about the extreme followers of other schools. You will find as a rule, that it is chiefly the followers or private admirers of leading men who run into extremes and do mischief. You all know the well-known story of Wilkes, who protested that "*he* never was a Wilkite."

The natural recoil from the extreme severity of the classical school has produced a kind of taste which, not without some reason, alarms those who have lived down to us out of the quiet times. From being entirely given up to copyism, we are now devoted to the extreme of originality. There is in many quarters a restless longing for something to break the monotony of ordinary art. We now and then see designs so entirely out of the line of our common life, that we are compelled to forget all we know before we feel we can give them fair notice. To begin with the extreme case of a design, which is not only entirely original, but, in the abstract, beautiful, it is worth while to consider the chance of its real beauties being thoroughly appreciated from the suddenness and want of preparation with which it comes before us. The same novelty, used more sparingly, in many buildings might have gradually gained upon the minds of people who will now pass it without notice. There is nothing to connect our minds with that of the designer, and although his may be no less true than ours, it fails of its effect from want of sympathy, and a common understanding. After all, one of our objects in speaking, besides that of speaking well, is speaking so as to be understood. Read the opening pages of the "Lamp of Memory," where the effect of isolation on natural scenery is very poetically expressed. Looking on a lovely ravine in a pine forest in the Jura, the writer suddenly imagines it to be in a solitude of the new continent. "The flowers in an instant lost their light, the river its music." One may qualify this strong expression as he does; but there is sober prose in our feeling with respect to a design which asks too much of our faith and too little from our sympathy. If it were part of a style and of history we might think it exquisite, because we should take the trouble to learn the character in which a nation had written its life in stone: it is not worth while to do as much for the idea of a man in the next street.

The extreme picturesque school can hardly be accused of this error. Originality in their language often means the introduction of as many features as possible of styles in which we feel interest, with no superfluity of care in arrangement into one design, under the mistaken notion that we shall transfer our admiration for the old buildings to such as have surpassed them in irregularity. Amateurs who care for art at all are almost certainly of this school. We were advised in these rooms, the other night, to design each building in our streets as in itself a unit, standing by itself. I feel convinced we had better construct it designedly for the position in which it will really stand; not more to do it justice than to give its neighbours fair play: this is more courteous, and, I think, more artistic, if less picturesque. Time will bring those gaps, and additions, and patchings, and rebuildings which we admire so much in old buildings, quite as soon as we can give them historical interest; and after all is said, these things are in themselves blemishes, and we only take pleasure in them because they are the marks by which we have known old friends.

Whether these marked and unstudied irregularities appear in plans or in details of old buildings, do not let us mistake them for beauties. Imperfections are always easiest to copy, and most liable to be taken as characteristic of a style. It would be as reasonable to imitate the peculiarities of people we meet in order to catch the tone of good society. One may see any night for a shilling one or other of those performers who profess to mimic our well-known public characters: there are the familiar peculiarities of voice, gait, and manner, and more of them crowded into half a minute than the original would show in an hour: the effect is most comic and amusing. But all these points are really such as distinguish the man from the true central type of a gentleman. To attempt that type, would deprive the performance of its personal and imitative character, and its interest; but if he can do it, he is a gentleman, and no mimic.

The worst error into which we are likely to fall is, from its coarseness and rudeness, the extreme opposite of the starved gentility which characterises the worst classical imitations, and from its being so opposite it is likely to be mistaken for vigour. If our houses are carefully coarse, the furniture will be even worse, as it is the nature of furniture to be. It must be perverse ingenuity that extracts from Gothic art, which abounds in elegance and congruity, models and modes of execution which must have tended to vulgarity in their own day as now. The name of Gothic is sometimes passport enough to carry into churches and drawing-rooms specimens which look like the joint production of a hedge carpenter and a shoeing smith, and if they are polished and filed up, we are not the better for having rudeness without the excuse of rusticity.

We are seeking novelty in the direction of science also, and disregarding both old forms and beautiful forms in favour of forms which are intended to express very naked—indelicately naked—truth. All possible colours are introduced to give emphasis to important features, and destroy breadth and repose. The beauty of the exterior of a house is the gift of the owner to those whom he does not ask into his house, and the sensations these things excite are of the kindred of those felt at an entertainment where every bit of trouble taken to accommodate and please are exhibited and magnified, and one usually feels that a mild neglect would be more tolerable.

None of these things are necessary to true originality; there is abundance of variety possible in right ways: nobody ever exhausted all the manners of doing well. True originality I have endeavoured to exhibit to you as a thing of slow growth, and not a spasm. It was so in all ages where art was flourishing, and will be so now. I feel confident that progress is to be made in this way, and not by waiting for a heaven-born genius. What we want is true vigour and life, and not the alternation of luxury and coarseness, that used to lead men from drawing-rooms to the prize-ring and the cock-pit. In good times of Gothic art, men were given to be in earnest; for good or evil, they did not mince matters then. People are fond of voyaging, and exploring, and mountain-climbing now, who, a century since, would have rather climbed the back-stairs of palaces,—they are more manly, and not less loyal and true. A thin-blooded race may be minute and careful, but is not likely to be very original. So as constitution is an element in originality. It is well that in our summer tours we should get skyward sometimes, and take pleasure in looking down on the life of villages, and the life of field and forest and winding river, with a dozen counties lying blue in the distance—a healthier blue at most times than that into which people pitch stones at Brighton.

It seems likely that the tendency will be to form a very liberal kind of what one must call Italian for want of another name, out of the Classical styles, with a tendency towards the Gothic type; and in a similar way the various phases of Gothic art are being united into one

style: every addition from the source of our own originality will bring these two classes nearer together; but if we are to make any progress towards the formation of a united style, the professor of architecture must not confine his studies to the works of any particular period. We may tolerate in the well-intentioned amateur ideas that are less the result of narrow-mindedness than of narrowness of information; but the architect who neglects to study any of the styles of his predecessors can hardly hope to produce designs worthy of the praise of posterity.

We may step any day from between English hedge-rows into the wreck of a Roman city, and tread amongst the confused relics of a bygone time. We look with curiosity now on the ruined baths, and the deeply worn steps at the door of the market. Will any age ever look with such interest on our works in ruin, waste good steel in shovel and pickaxe, and give up to excavation their beans and barley? They will respect our classicality and antiquarianism, as we do all honest learning; but in those far-off times when the world is older, and wiser, and busier, if they are to trouble their heads further about us, we must, besides being honest and learned, be original.

NORWICH CASTLE AND CATHEDRAL.

COMMENTING on a paragraph in a recent lecture on the "Restoration of Ancient Buildings," to which reference has been made, Mr. John Daymond Ellis, dating from the Cathedral Close, Norwich, writes,—

In your last impression I saw a letter from Mr. Phipson, supporting Mr. Street in his views, so far as regards the cathedral (namely, that the walls have been plastered with cement); for he says, this is true as far as the cathedral is concerned, but with regard to the castle it is entirely erroneous.

I am happy to say that Mr. Phipson has fallen into an error in endeavouring to correct Mr. Street. All the restorations to the cathedral which have been carried on during the last twenty years have been effected with stone: quite recently, three sides of the tower have been under thorough and perfect inspection; and where the old stone was good and sound, it was left: where new was required it was substituted, exactly of the same size, form, and dimensions as the old; and the annual restorations which are still going on are executed in stone. With the exception of the interior of the tower turrets, and the partial stopping of the stonework, where decayed on the south side of tower arcades, and the circular lights over it, which were executed some twenty-five years ago; there is not, I am glad to say, a yard superficial of cement work to be found on the external surface of Norwich cathedral; and I am informed, on good authority, that the parts now partially formed with cement will soon be taken down and restored with stone. The south transept and turrets of the tower were restored some thirty years ago, in rubbed and fair-jointed Bath ashlar, which certainly has an unsatisfactory appearance; but still it is stone, and not cement; and I think it must be admitted, that the recent external restorations have been carried out in a very careful manner, especially after the dilapidated state it had been allowed to assume; for "Britton" says of this cathedral, in 1812, "although the interior has been repeatedly repaired and beautified, as is commonly termed; the exterior architecture and masonry have been much neglected; and nearly the whole surface displays a ragged, crumbled, and decayed appearance, from the friable and loose quality of the stone: its surface is shivered off in many places: nearly all the mouldings of the arches, with the string-courses, capitals, and bases, have lost their forms and features."

A quarter of a century ago and the present time are two different epochs in the restoration of Gothic architecture; but the architectural public may assure themselves that, should the Dean and Chapter ever allow cement to be used in the restorations of the cathedral, a tower almost as powerful as that of Babel would be raised against them.

The Castle keep was restored and cased with stone from 1834 to 1838, as stated; but was commenced under the direction of Mr. Frank Stone, then county surveyor of Norfolk. The death of this gentleman taking place before the works were completed, Mr. Salvin was called in to do so, and they were finished under his superintendence. An excellent drawing, made by Mr. J. H. Hakewill, bearing date, I think, 1835, shows the commencement of the casing to have proceeded about as far as the original flint-faced base extended; and I am informed, by old friends to the building, that it is a very faithful view of it. I believe the restoration was made with the view of exactly following out the features in the old building, which certainly was in a very dilapidated condition; but the unfortunate part of it was that, instead of being cased with rubble, or rag ashlar, the work was done with large fair-faced Bath stone ashlars, with rubbed joints and beds, and the whole presented an even, smooth surface. Great objections were made to it at the time, when the whole of the surface was covered with false joints, sunk into the stone about three-eighths of an inch, and filled in with black mortar, so as to make it appear that it was composed of ashlars about 18 inches by 19 inches, &c.: it certainly has not a very satisfactory appearance; but that it is *stone*, and not *cement*, is evident to any one who glances at it.

EXCAVATIONS AT CYRENE.

LIEUT. SMITH and Lieut. Porcher, R.N., have been engaged for some months under the auspices of the Foreign Office, in making excavations among the ruins of Cyrene. They have already discovered marbles of value and antiquarian interest, which have arrived at Malta, and are shortly to be conveyed home. The articles consist of a colossal statue of Æsculapius, 8 feet high; a Bacchus, 6 feet high; a statue of a female, between 4 feet and 5 feet high; a statuette of a female strangling a lion, supposed to be of Diana; and upwards of twelve heads of various sizes; amongst them one life-size of Minerva, most exquisitely sculptured, and in an excellent state of preservation: the face is of a beautiful contour, without a single blemish; the projecting peak of the helmet, slightly broken in falling off its original pedestal, having probably saved it from injury. With the exception of Bacchus, which was found in a temple by itself, all these remains were dug out of the ruins of the Temple of Æsculapius, and the whole of them are of pure white marble. The statue of Æsculapius is said, by persons who profess a knowledge of such matters, to be in the best style of Greek art in the period to which it belongs.

In connection with this notice of the results of Lieut. Smith's operations in the ancient Cyrenaica, it may be interesting to our readers to learn something of the quarter from which originated the idea of searching the site of Cyrene for art treasures. The present Earl Somers, before he succeeded to the peerage, had made many extended journeys in the classical regions of the Levant; and, being a very able artist, his attention was directed to the remains of Greek and Roman times, in a fine-art point of view, rather than in a more purely antiquarian spirit. Each trip made by him added a fresh series of sketches and paintings to his fine collection of original drawings, many of which were finished on the spot in water colours. In the course of one of his early journeys among the celebrated ruins of Asia Minor, he visited Halicarnassus—the Boodroom of the Turks,—observed particularly the sculptured marbles built into the walls of the castle there,—and succeeded in carrying away a daguerreotype of one which formed a prominent object on the exterior of the opposite castle of Stancho. The exhibition by him of this to Mr. Newton and other officers of the classical department of the British Museum, and his general account of the site of Halicarnassus, formed the germ of the expedition afterwards undertaken with so much success by Mr. Newton. It was Lord Somers's intention to follow up the matter himself; but, owing to his being in Parliament, he had not the necessary leisure; and although he went so far as to procure a *firman* from the Porte, authorizing him to dig and remove stones at Boodroom, he was obliged to forego the work; which was then prosecuted by Lord Stratford, and resulted in the securing of the first series of Boodroom marbles for the British Museum. Among the places which Lord Somers had marked down as most likely to reward exploration was the Cyrenaica which he had fully made up his mind to examine in detail. Being at Rome three years ago, when Mr. Newton, of the British Museum, was there; he communicated to that gentleman the opinion he had formed of the art riches concealed at Cyrene. The remarkable discoveries recently made by Lieut. Smith in Barca may justly be considered as the practical carrying out of Lord Somers's views with regard to that most interesting territory.

There yet remains one other portion of classical ground which Lord Somers has pointed out as likely to repay an antiquarian expedition, by bringing to light treasures of another kind. This is ancient Cilicia, on the southern coast of Asia Minor; where, in travelling in the fall of 1843, he met with most extensive remains of the early Christians. Here are to be found vast cemeteries filled with Christian monuments, containing many curious inscriptions, and numerous churches of the earliest centuries of our era, which have never been investigated. This would probably be found as fruitful a field for the labours of the Christian archæologist as Halicarnassus and Cyrene have proved in respect to classical art.

OZONE.

SCHONBEIN has been industriously following up his researches respecting the presence of this peculiar and most important agency in the atmosphere. He has just found that when a strip of paper, moistened with a solution of pyrogallic acid, is introduced into an atmosphere containing ozone, it is rapidly darkened; whilst, if no ozone be present, the paper retains its original whiteness. A test of this body ought to be as common in a house as a barometer. The test recommended by Dr. Angus Smith, Miss Nightingale, and others, as we have before remarked, is the alkaline permanganates, or Condy's fluid, which, besides, is itself a vehicle of ozone; and, as a free contributor of it, is in extensive use as a sanitary agency identical in its nature with the very ozone of the atmosphere itself — the great scavenger and cleanser of nature. Ozone is almost equivalent to health. In crowded cities or unhealthy neighbourhoods it is scarcely ever to be detected; whilst, on the ocean, the sea shore, or elevated open tracts of country, it is almost invariably present in quantity. The first outbreak of an epidemic such as cholera is always heralded by a rapid decrease of ozone in the atmosphere; whilst its re-appearance is almost as certain a sign of the cessation of the sickness. Ozone appears to be essentially electrified oxygen; and that, in truth, is the vital air which we breathe, and which sustains life and health. Were the oxygen of the air *entirely* neutral, or unelectrified, it is doubtful whether it could sustain life or constitute *vital* air at all.

THE LABOUR QUESTION.

London.—The reports we receive are conflicting, and we prefer silence to error. This much is certain, that the number of firms who have determined on paying by the hour is increasing, and several inform us that their men are well satisfied. One large builder writes us as follows:—"As far as I am concerned my men have *all* agreed to the change with the exception of some plumbers and foundrymen. The latter were unanimous in favour of the alteration, and took part with the other men in deciding the time (one o'clock) they should leave off on Saturday; but were withdrawn by the society at the last moment. The delegates sent here said they could not understand why masters should offer such an advantage to the men without some sinister motive lurking behind!"

Stockport.—The disagreement which, for several weeks past, has existed between the master and operative joiners, in the shape of a strike and lock-out, has been considerably modified, if not altogether settled. A general meeting of members of the society was held; when the advice of the magistrates—to settle things amicably—was acted upon, and all grievances were set aside; the men consenting to return to their work. This was intimated to the magistrates, accompanied by an application from Mr. Howard, solicitor, on behalf of the Messrs. Longson, to withdraw the prosecutions for intimidation.

Chester.—The principal employers in Chester have issued a statement, in which they say,—

"The masons are still on strike for the terms they turned out for on the 1st of April, which were 28s. per week for the nine summer months, and 26s. per week for the three winter months; and a further curtailment in the hours of labour; the offer made them being 27s. per week for the summer months, and 25s. per week for the winter months, the hours of labour to remain as they were: upon these terms we have obtained men to supply the place of the turn-outs that left us then. With the exception of the work at St. John's Church, which has been kept standing, we have all been able to carry on our works better without the class of men we had before the turn-out than with them, as at that time we had in our employ men who were tramps, temporarily located in the city, and who sowed the seed of discord amongst those who were working for us. The workmen who were settled in the city, being perfectly satisfied with their employers, refused to accede to the unreasonable demands of these men and to turn out, and they have remained at their work ever since; and we are only glad that the city has been sifted of the unionists, who neither benefit themselves nor their masters."

RAILWAY BRIDGES.

THE following evidence has been given by Mr. T. Hawksley, C.E., with reference to the recent fall of a railway bridge at Wootton, on the London and North-Western Railway. The casualty, it will be remembered, was unhappily attended with the death of two men. Mr. Hawksley said:—"The cause of the accident, in my opinion, was not from any defect in the trussing of the bridge, but from defects in three of the transverse iron girders, particularly in the one which had been fractured. There were two fractures in that girder, one of which had been attempted to be sliced, by putting angle irons on the sides. I apprehended at the time of that repair there was no other observable fracture; but there is now, and has been observable for some time, a fracture a distance of 15½ inches from the original fracture: the second fracture has taken place through a bolt-hole, which had been drilled to secure the angle iron. Another of the girders is affected by a blow-hole in the interior of the metal, caused by the confinement of air in the cast. A third is similarly affected. The cause of the accident I believe to be this:—The engine, being a very heavy one, came upon the bridge so that its whole weight was, as nearly as possible, sustained by two of the girders which would represent a strength of about fifty-two tons, or not quite double the weight of the engine: as a general rule the strength of a bridge should be four or five times greater than the extreme weight to come upon it: at the time the bridge was erected I believe its strength was calculated in that manner, and that it would have borne four or five times the weight then required to be put upon it. Since then circumstances have very much altered. Twenty years ago engines did not weigh more than eighteen or twenty tons, whereas now they run engines of thirty tons weight, and upwards, I believe."

The inquest has terminated in a verdict ascribing the accident to the insufficiency of the bridge, which had had a crack in the second girder long enough to allow of its detection. They do not assert that the omission* to detect this flaw amounted to criminal neglect, but they find that Elliott Sewell, the inspector of permanent way, had not satisfactorily performed his duty. Captain Tyler, the Government inspector, who was examined, said that railway companies were getting into the habit of putting more traffic on their lines than they were originally constructed to bear.

MONUMENTAL.

Mr. Lough's Monument to George Stephenson.—Newcastle will have reason to be proud of the statue of George Stephenson, which Mr. Lough has just now completed, ready for casting, as part of the monument which is to be erected to him. The figure, 11 feet high, stands beautifully, full of life and mind. Enveloped in his plaid, great breadth has been obtained without sacrifice of truthful representation. We sincerely congratulate Mr. Lough on his achievement. The whole monument will be about 30 feet in height. At the foot of the pedestal, as our readers know, are sitting figures typifying the pitman, the blacksmith, the working engineer, and the plate-layer. We shall hope to see the whole, complete, set up in the approaching International Exhibition, before it goes to Newcastle. We are glad to hear, and many of our readers will be so too, that Mr. Lough's noble group, Nilo,—his first work, the ground-stone of his fortune, laid amidst struggle and privation,—is at last to have the permanence of bronze. It is to be cast immediately.

The Hooper Monument.—Tenders for executing the designs of the architects, Messrs. Medland & Maberly, privately invited from several builders, have been opened. We understand that, before either of the tenders was opened, it was resolved that, as the builders communicated with were persons of respectability, who might be relied upon to erect the monument in the best possible manner, the lowest tender should be accepted. This happened to be that of Mr. Oliver Estcourt, at 275*l.*, which was, therefore, accepted. The highest tender exceeded that of Mr. Estcourt by 25*l.* only.

The Montgomery Monument, Sheffield.—This long-delayed monument to the memory of James Montgomery is at last on the eve of completion. It was intended that it should be inaugurated on the 30th of April, the anniversary of the poet's death; but some difficulty in procuring the necessary materials for the pedestal has caused delay until this time. This week, however, Mr. Edwin Smith has completed the building of the base and the erection of the pedestal. Within a few days the statue will be received from the works of the Coalbrookdale Company, where it has been cast in bronze, and will be raised to its position. The statue will stand, as recommended by Mr. Bell, facing the south-west, with its back to the tower of the cemetery church.

CHURCH-BUILDING NEWS.

Exeter.—The foundation-stone of a new chapel-of-ease to the parish of Heavitree, Exeter, was laid on Wednesday, June 26th, by Lord Poltimore, who has presented the site for the chapel and burial-ground. The assembly was addressed by the Rev. Canon Woollcombe, vicar of Heavitree. The chapel is close to the hamlet of Whipton, and is to consist of nave, 49 feet 6 inches by 21 feet; chancel, 16 feet by 16 feet; transept, vestry, and porch. It is to be of Early Decorated architecture, the facing of Killerton stone, and Bath stone dressings. The cost will be about 1,300*l.*, and accommodation for 200 persons. The builder is Mr. Kenshole, of Heavitree; and the architect Mr. Edward Ashworth, who has recently designed a reredos for the parish church of Heavitree, of Perpendicular work, at a cost of about 70*l.*

Darlington.—Mr. Scott, architect, who had been requested to survey and report upon the condition of the old church of St. Cuthbert's, Darlington, gives it as his opinion that the edifice is in a most dangerous condition. The church, which he characterizes as being "one almost perfect and uniform in its design, as well as one of the handsomest in the north of England," was built in the twelfth century by the celebrated Bishop Pudsey, during the transition period of architecture from the Romanesque to the Pointed style. Mr. Scott makes various suggestions as to the best mode of restoration, and sets down the total cost at 6,100*l.*

Durham.—The Primitive Methodist Jubilee Chapel has been opened. The building is situate on the North-road. It is in the Geometric period of Gothic architecture, and is estimated to hold about 600 persons. The principal feature in the front elevation is a large four-light window, with tracery, moulded jambs, &c. On each side of the central window is placed a single-light window with tracery. The whole of the glass is of extra thickness, and ground, so as to prevent the necessity of using sun-blinds. The carved cuspings of the large window were done by Mr. Beall, of Newcastle. There are two entrances to the chapel, which have square-headed doors, with pierced tympanums below pointed arches. The interior woodwork is of Petersburgh and pitch pine wrought, stained in tints, and varnished. Instead of the usual pulpit there is a platform, the front of which is ornamented with trefoil and circular-headed cusped panels, and hung with drapery behind. The lighting of the chapel is by a star-light of fifty-one jets, suspended from the ceiling, and also acting as a ventilator. There is a vestry attached to the chapel, which may be used for class and similar meetings. On three sides of the chapel there are galleries, supported by cast-iron columns, which are also made available for the purposes of ventilation. Foundations for the building had to be dug 14 feet below the floor, and filled in with concrete. The architect was Mr. G. Kyle, of Durham; contractor for masonry, Mr. T. Punshon; joiner work, Messrs. Bridges & Cockburn, Hartlepool; plumber, Mr. Laidler; plasterer, Mr. Pearson; glazier, Mr. Housemann, Spennymoor; slater, Mr. Rule; smith, Mr. W. Howison.

Witton Gilbert.—The foundation-stone of a new Methodist chapel has been laid in this village. The site is central. Accommodation is provided for about 200 persons, in addition to a class-room, &c. The style is Early Pointed. The interior will be fitted up with open seats, of Petersburg deal, stained and varnished. The design is by Mr. G. Kyle, of Durham, architect; and the contract is taken by Mr. T. Smith, of Spennymoor.

Jarrow.—The foundation-stone of a Methodist chapel has been laid at Jarrow. The chapel, when completed, will accommodate about 300 persons on the ground-floor, where there will also be a minister's vestry and class-room at each side of the entrance lobby. The design is of Italian character, and will be executed with pressed bricks to the walling, and moulded brick cornices, stringcourses, &c. The interior will be fitted up with open benches of stained and varnished deal, arranged so as to rise by steps from the level of the preacher's platform. The chapel has been designed by Mr. G. Kyle, of Durham, architect; and the contractor for the works is Mr. W. Prior, of Shields.

South Shields.—Mr. J. Elliott, of North Shields, the contractor for erecting the church near the Tyne Docks, South Shields, has commenced with the foundation. The church is to be erected near the main entrance to the dock. The contract is about 4,000*l.*

Sunderland.—The foundation-stone of a Jewish synagogue has been laid here. The building will have a classic front, and be built of brick, with stone dressings. It will be 25 feet high, 42 feet long, and 36 feet wide. It will seat 120 males in the body of the building, and 70 females in the gallery, where they will be screened from observation, as is the custom in such places of worship, by a metallic screen. At the east end of the building the ark will be placed; Corinthian pillars, in Caen stone, being the ornamentation of it. In front of it will be placed the altar, and then the warden's pew. From the vestibule two folding doors will lead to the two aisles in the body of the building. Mr. Tillman is the architect, and Mr. T. Younger, junior, has obtained the building contract.

St. Andrews.—St. Salvator's Church, St. Andrews, is about to undergo a renovation, internally and externally, according to plans prepared by Mr. Matheson, of Her Majesty's Board of Works. The contracts have just been settled; the cost in the meantime being 1,019*l.* Messrs. Kidd & Son, of Dundee, are the joiners; and Mr. John M'Intosh, of St. Andrews, is the builder employed.

Ballymote (Ireland).—The *Sligo Champion* reports the progress made with a new Roman Catholic chapel here, in the form of a letter from the architect, Mr. G. Goldie, to the parish priest. "The first division of the contract," he says, "is now approaching completion. It was to include excavation, masonry, and cut-stone work, and to cost 1,515*l.* To this amount is added stone arches for 100*l.*, and a portion of the tower for 260*l.*, making in all 1,875*l.* Of this Mr. Barker (the contractor) has drawn 1,683*l.* 10s., leaving a balance of 191*l.* 10s. to complete the arches, clerestory, west rose window, and chancel window and arch. But to this balance may be added the value of the roof to sacristy, and porch, slates, lime, sand barging, &c., on the ground, which may be estimated at 50*l.*, and which belong to the second portion of the contract, so that you have a sum, or an equivalent, for 241*l.* 10s. to complete the first portion of contract, the value of which is about 199*l.* The important point now to be decided, and that as speedy as possible, is that of carrying on the second portion of the contract, namely, roofing and slating, to which was apportioned the sum of 868*l.* Your present chapel is in a dangerous and unfit state for divine worship. The walls of the new church, if left exposed for the winter, will be sure to suffer from wet and wind."

Jersey.—The English Congregational Chapel here will soon be opened. The entire cost is 1,800*l.*, including architect's fees, gas, warming, &c. The cost of the land was 580*l.* They intend to raise 300*l.* for part purchase of the land, leaving a ground-rent of 15*l.* per annum.

SCHOOL-BUILDING NEWS.

Dudley.—New schools have been erected by Mr. Cochrane, at Holly Hall, about a mile from his ironworks at Woodside. The buildings are of red brick, with stone window and other dressings, and the roofs are covered with red and blue tiles, A clock-and-bell-turret rises to the height of 60 feet. The boys' and girls' schools are at right angles to each other, and are each 46 feet by 18 feet. They may be thrown together; and opposite the girls' school and in the centre of the boys' an apse projects, containing a communion-rail, table, &c.; so that the building may be used for Divine service; the apse forming a small chancel, the two parts of the boys' school transepts, and the girls' school the nave. An infants' school, 35 feet by 18 feet, is at right angles to that of the girls'; and two class-rooms are provided by the boys and girls respectively. The play-grounds are extensive; and, as the ground falls considerably in that direction, advantage has been taken of the circumstance to erect cloisters in which the children may play in wet weather. Houses are provided for the master and mistresses at opposite angles of the building; and each has a bay window in front. The interior height to the spring of the roof is 14 feet, and 32 feet to the top; the roof being open and of stained wood. The building has cost 2,500*l.*, exclusive of the land. Mr. Bidlake, of Wolverhampton, was the architect; and Messrs. Elliott & Lovatt, the builders. Mr. Evans, of Handsworth, provided the clock; and Messrs. Hill & Smith, of Woodside,

manufactured the iron railings, from the design of the architect.

Mathon.—The foundation-stone of new schools for this parish has been laid. Mr. W. J. Hopkins, of Worcester, is the architect; and Mr. P. Alder, of West Malvern, the builder.

Newhaven (near Edinburgh).—The foundation-stone of new parish schools at Newhaven has been laid. The erection of these schools, the estimated expense of which is 1,100*l.*, has been promoted by persons belonging to all the religious denominations in the district. The architect of the building is Mr. John Lessels, of Edinburgh; and the contractors for the works are Mr. J. Bisset and Mr. J. Gilfillan, also of Edinburgh.

STAINED GLASS.

Westfelton Church.—A mosaic lancet window, about 9 feet high, with two lights, has been fixed in the nave of this church by Messrs. David Evans & Sons, of Shrewsbury. It is erected at the expense of the Hon. Mrs. Kenyon, of the Prado, in memory of her two sons. Each opening has two medallions. Those on the right represent Daniel in the lions' den. The figure of Daniel is from Westall's picture. The medallions in the left compartment are illustrative of the Babylonian captivity. In the apex of the window, on scrolls, are the passages:—"Behold thy salvation cometh;" and "He will swallow up death in victory."

Glasgow Cathedral.—Other three stained windows have arrived at the cathedral, from Munich. The donors are Lady Montague, Mr. Middleton, of Glasgow, and Mr. Graham Sommerville. The window of the last-named will be placed on the left side of the church, and the other two in the north aisle of the nave. Mr. Mathieson, of the Board of Works, was to inspect them previously to their being put in their places.

PROVINCIAL NEWS.

Bedford.—The Three Counties Asylum is erected on a site in the parish of Stotfold, and stands nearly north and south. The south and principal front, says the *Bedford Times*, consists of a large centre building, covered with the clock tower, and containing the superintendent's residence, with private entrance; committee-room, clerk's room, and waiting-room, together with store-room; surgery, and apartments for matron; and two long wings, for the most part three stories in height. These are severally devoted to the patients; the males being located in the west wing, and the females in the east wing. These wings contain corridors communicating with large rooms, which, on the ground floor, form the day-rooms for the patients. On the first and second floors the large rooms and corridors form the dormitories, out of which open smaller rooms, containing three or four beds a-piece; and also single sleeping-rooms, every patient having a separate bed. The corridors and large rooms have all open fireplaces. To the several wards are appended sculleries, lavatories, bath-rooms, waterclosets, &c. The infirmaries are placed near the centre of the building. The north side contains the kitchen, larder, and store-rooms, beer-cellar, dairy, bakehouse, coal-cellars, &c.; and over the kitchen is the chapel, which is constructed to hold 400 persons. Three covered passages connect this building with the main building of the asylum. The water-towers rise to the height of 48 feet, and near to the top of each is a large tank, holding 10,000 gallons of water. There is also in each tower a smaller tank, which is supplied with hot water from boilers, erected in the basement of the towers: from these four tanks the general distribution of hot and cold water throughout the asylum is made; and fire-mains are placed in different parts of the building, from which, by the addition of hose, cold water can, by pressure, be thrown over any part of the asylum. Beyond the water-towers, on the male side, is an irregular wing, containing the tailor's, shoemaker's, and carpenter's shops; and behind which are the brew-house, malt-stores, plumber's, and smith's shops, with a forge, and various offices. On the female side the corresponding wing contains the laundry, washhouses, &c. There are also farm buildings, with suitable yards, and a gashouse, &c. The buildings are all of white brick, having a line of red brick in the cornices and chimneys, with stone mullions to the windows. The total cost of the new asylum, including land, outbuildings, and contingent expenses, has been 114,831*l.* 6s. 1d.

Littlehampton.—Mr. E. Corney's tender for the first portion of the outer harbour extension works for 880*l.* has been accepted; the harbour-master's estimate being 850*l.*; and the other tenders, viz., Butt's, 909*l.*; and Bushby's, 1,165*l.*

Banbury.—The following tenders for building a police-station, in Newland, Banbury, have been sent in:—

Jones	£2,473 10 0
Claridge & Son	2,100 0 0
Orchard	2,147 0 0
J. & T. Davis	1,999 0 0
Kimberley	1,940 0 0

Mr. Kimberley's tender was accepted.

Malvern.—The following were the tenders for the erection of public offices for the Malvern Improvement Commissioners. Mr. James Shipway, Great Malvern, architect:—

Holt	£1,742 10 0
Wilson	1,615 0 0
Smart (accepted)	1,589 10 0

Cardiff.—The new County Lunatic Asylum may now be said to be commenced; by the architect, Mr. Bell, of London; Mr. Chittendon, of Cardiff, clerk of the works; and Messrs. Barnsley, of Birmingham, the contractors, staking out the ground for the various buildings. The contract is to be completed in something under eighteen months, and the entire cost of the buildings will be between 22,000*l.* and 23,000*l.* A correspondent of the *Cardiff Guardian* asks "how it is that the local contractors are beaten out of the field; for, while Messrs. Barnsley have built the Swansea Gaol and Howell's Schools at Llandaff, Mr. Webb, of Cardiff, and formerly of Birmingham, has built the gaol at Cardiff, the Militia Stores, the Police-station at Llandaff, and is now erecting the public Baths and Washhouses, besides other important private buildings in the town." The site selected is about a mile and a half from the town of Bridgend, on the road to Court Coleman, on elevated ground. The buildings will be of the native stone.

Brecon.—Various public improvements are being effected at Brecon, according to the *Hereford Times*. Turkish baths have been erected at Mount Pleasant. They were fitted up by Mr. Thomas Allen, of Westminster, Turkish bath builder. The old Priory Church is now in the hands of the builders, Messrs. James & Price, of Cardiff; who, under the direction of Mr. Scott, architect, are proceeding with the restorations; a good many men being employed on the works. There has been discovered, close to the Honddu bridge, at Priory Groves, a spring of saline or chalybeate water. The proprietor, Mr. Thomas Davies, who occupies the Forge Villa, discovered last year the springs, and got them analysed by a medical gentleman, who pronounced them equal to the continental mineral springs of Karlsbad and Kissengen. Mr. Davies has erected a pump-room, bath, and other conveniences, adjoining the well, which have just been thrown open to the public. The College buildings are just being commenced at Brecon, under the direction of Messrs. Pritchard & Seddon, of London, architects, by Messrs. Williams & Sons, builders, Brecon. The Head Master of Christ College School is soliciting additional subscriptions towards restoring the Church of Christ College, which adjoins the proposed new buildings. He has received the promise of several hundred pounds. Messrs. Griffiths & Sons, contractors, are at work with a staff of men at the new Government Rifle Range, at the foot of the Beacons, erecting accommodation for sixty men as a commencement; and they have received further orders for laying out a new 1,000 yards range with proper drainage, a bridge over the gully or ravine, &c. The contractors are under orders to finish the huts by the 30th of this month. The building is of stone walls, with timber and slated roof, and is to be finished in a very substantial manner. Two parish churches are about to be opened by the Bishop of St. David's—the one at Merthyr-Cynog, nine miles from Brecon, and which has been restored under the direction of Mr. C. Buckeridge, architect, Oxford, by Mr. David Prosser, builder; and the other at Aberyskir, near Brecon, which is nearly all rebuilt, under the direction of the same architect, and carried out by Messrs. Griffiths & Son, builders, Brecon. There are new schools being built at Talybont and Llanspyddyd, near this town. The different railways in progress will have stations at Brecon.

Birmingham.—The merchants and manufacturers have asked the mayor to call a meeting for the purpose of establishing an Exchange in Birmingham. The only subject for surprise is that it has not been done before.

Tynemouth.—Mr. Joseph Elliott, builder, North Shields, it is understood, has entered into contracts to erect a large number of workmen's cottages at the Tyne Dock, for the North-Eastern Railway Company.

Edinburgh.—The rumours which excited attention here lately regarding some alteration of intention as to the new Post-office, may be considered, says the *Scotsman*, as having been a "false alarm;" Mr. Matheson's plan having been finally approved and signed by the Chief Commissioner. "There had at one time," continues our authority, "been, as was previously known, some hesitation between Mr. Matheson's plans and those of a London architect; but Professor Cockerell and Mr. Pennethorne having been consulted, their approval was given to the designs of Mr. Matheson. The question formerly causing the delays would appear to have been one of architectural taste; but latterly the acceptance of Mr. Matheson's plans seems to have been a settled matter, and nothing to have been in the way but the consideration of some quite trifling changes and compliance with the necessary forms."

IMPROVEMENT IN LONDON STREETS.

SIR,—As you are an able advocate of all improvements in the streets of London, you may agree with me that the three following are amongst the most deserving of the public notice:—

The first is the continuing of Marlborough-street through Noel-street and Hollen-street to Dean-street.

The second is opening that fine wide street, Broad-street, Golden-square, both east and west.

The third, and not least, is the continuing Old-street to Tottenham-court-road, or perhaps Gray's-Inn-lane at present, through the grounds of the old monastery called Sutton's Hospital, and better known as the Charter House. This Charter House, by the way, is a disgrace to the age. It is as much a monastery as ever *in spirit*, and wants the light.

A. B. C.

THE ACOUSTIC PROPERTIES OF ROOMS.

IF I am not trespassing too much upon the space you may have to spare in the columns of your excellent publication, I would wish room for a few remarks upon a subject which nearly all of us must admit is of the first importance as regards our edification and pleasure; namely, the difficulty we experience in hearing clearly and correctly public speakers, preachers, and singers, in most of our churches; and particularly in our great public buildings, especially in some parts of the buildings. This does not rise so much from the deficiency of the speaker or singer as from the peculiar size, dimensions, or proportions of the buildings. Several instances of this difficulty of hearing occur in such buildings as the noble room in the Leeds Town-hall; the large room of the Blackburn Town-hall; and even the magnificent St. George's Hall, in Liverpool, is not free from this great defect. These buildings are splendid specimens of architectural skill as regards size, form, and general character; but, as regards the facility for hearing, sadly defective; and, though several remedies have been tried, and are being tried, at the present moment, I think none has been found to remedy the evil complained of.

I think it must be admitted that sound, having its laws, is affected by the proportions of the room wherein it is emitted; consequently, a building of a certain height, length, breadth, form, and arrangement in its details, is required to enable an assembly of persons to hear clearly and distinctly in every part of the room. Now I have no doubt but your numerous correspondents are able to point out many buildings which they consider as good examples in this respect; but for myself I only know of *one room* (and I have been in many throughout the kingdom) which I consider as near perfection as possible, and that is the concert-room of the Cheltenham Pump-room, Harrogate; and, being desirous of contributing my small mite of information for the benefit of those who may be pleased to make use of it, and also for the purpose of stimulating further inquiry and investigation on this important subject, I have procured from Mr. Whitehead, of Harrogate, the exact dimensions, &c., of this room, which was built in 1833, from the designs of Mr. Clark, of Leeds, and contains the following dimensions:—

	Ft.	In.
Length of room inside	86	6
Width of room	33	0
Height to ceiling line	22	7
Ditto to centre	24	2

The ceiling is a segment of a circle rising 1 foot 7 inches. There are nine sunk panels in the length of the ceiling, and seven in width: these are 9 inches deep. There are nine large windows along the north wall, three windows at the east end, the same at the west entrance, and on the south wall there are two doors and one window, a

small orchestra about 10 feet high, and two noble ¾ Doric columns on each side of this orchestra, projecting 1 foot 6 inches from the wall.

It struck me at first sight (and does even now) as being too low in height for the length and breadth, considering it as to form and appearance; but I question whether, if it were raised even 4 or 5 feet only, it would be as perfect as to sound as it is at present; and it is worth while for any one who has the time and ability to investigate and inquire, from the proportions and dimensions I have already given, whether the architect of this building has not happily (and may be by chance) hit upon the best proportions; and also whether, after having calculated the exact contents in square feet of this room, any department (though containing precisely the same number of square feet) from its present form and proportions could with safety be made. T. B.

P.S. Since writing the above my attention has been called to an article in your paper of the 22nd ult.; but I may observe that this Harrogate concert-room cannot be said to exhibit the features and requirements of a good room, such as Mr. Roger Smith speaks so ably upon; yet it is standing as an example of a good room to be heard in; and such being a fact which I think cannot be doubted, it affords good data to reason upon.

THE EXTINGUISHMENT OF FIRES.

SIR,—The lamentable catastrophe which has happened, and shown so forcibly the incompetency of our present system, induces me to lay before you the following propositions:—

1st. Instead of using a flexible hose, having to be carried up or placed by the firemen where required (witness the difficulty encountered by Mr. Hodges in so doing), I would have a pipe of wrought-iron, or a hose attached to a fire-proof pole or rod, placed upon a suitable carriage (similar to that of fire-escapes, &c.), and capable of being lengthened or shortened, so that it could be at once placed or directed against the highest parts of buildings, without exposing the firemen to the flames or smoke, they having only to attach their hose to the lower end of the pipe.

2nd. That every great warehouse should have a system of pipes uniting in a main, which should be carried out of the building at a point that would be most accessible in case of fire to receive the hose of an engine (say by the place of the door-scraper). This opening to be closed by a valve, &c., to be opened by a universal key kept at the nearest engine-house. The ends of the pipes in the compartments of the building to be closed by suitable bungs of gutta-percha, which would melt in case of fire; so leaving the ends of the pipes in the required part open, whilst the others would remain closed: all the water would thus be directed where wanted; the ends or openings of the pipes in the warehouse being so arranged (in the ceiling, &c.), that the required pipe would be as it were unsealed, and the water play only upon the ignited part, not unnecessarily damaging the rest of the property. The pipes could not get choked with dust since all openings would be closed except in case of fire.

3rd. That floors be made as fire-proof as possible, but water-proof also, and having cavities between the ceiling and next floor, of say 6 inches, with pipes opening into them, with gutta-percha bungs or stoppers as above; so that when the heat has attained to them they will be softened and forced out by the pressure of the water forced in at the main by the door-scraper. R. F. C.

IN all storehouses I would suggest to have the partitions formed in wrought-iron plates, divided and subdivided into cellular compartments, each plate (*internally only*), both upright and horizontal, to be perforated; each partition to be of a thickness equal to the weight it has to support; all thoroughly riveted, and resting in front and rear walls upon a hollow story tie, composed of wrought plates, with upright divisions, for the support of superincumbent weight,—these divisions also perforated. Over each partition a segmental beam to be set, resting and riveted to said story tie, with straining and tie rods, as may be required. Door openings can be left where required in each partition; a trough, similar in every respect to story tie, to be placed in position of wall-plate for rafters to rest upon. Similar troughs to be placed in depth of joisting of floors connected with the tubular story ties; so that the entire of partitions, story ties, joisting, and roof, will form one piece of framework. All connected and all cellular compartments kept constantly supplied with a flow of water from tank in roof. The under surface of tubing of joists to be tapped at short spaces with screw taps, for screwing on of hose; both sides of partitions to have screw nozles left for same purpose; and all hollow tubing in front and rear walls to be also supplied similarly.

Should my suggestions be found applicable, I will be most happy to furnish a plan and sections of the proposed supply, together with a mode of extinguishing fires in underground stories from the exterior. E. K.

DURING my experience I have had one or two fires arising from spontaneous combustion, and this has given rise to some consideration on the means to prevent the extension of fire on such occasions. Some of the reports of the late conflagration attribute the early spread of the fire to the impossibility of approach to close some iron door, on account of dense smoke. I beg to suggest that, in ALL rooms containing matters liable to spontaneous combustion, there should be iron doors and *shutters*, so hung that, by withdrawing a bolt, they would fall together,—this bolt being connected by wire to the exterior of the building, so that all might be closed at the earliest moment. THOS. HANCOCK.

THE GREAT FIRE IN TOOLEY STREET.

SIR,—As the architect who has been engaged, in conjunction with my partner, Mr. Henry Stock, in the erection of the greater portion of the buildings on the Cotton and Depôt Wharfs, belonging to Messrs. Scovell, and also the whole of those on Hay's Wharf, belonging to Mr. Alderman Humphrey, I must be excused offering objection to some of the remarks made by Mr. Hesketh in your last number; at the same time giving him full credit for some of the suggestions therein made; and which, doubtless, would offer less facilities for the extension of the fire,—but those more theoretical than practical as to their application. But I must add, from the intense fierceness of the conflagration, it was utterly impossible for any warehouses adjoining, stowed with goods, to resist combustion, although no openings existed therein; and my firm impression is, the majority of them were set on fire, not from direct contact with fire or flame, but from the intense heat which caused the combustion of the materials stowed therein.

In reference to Hay's Wharf, the magistrate's decision was not given upon the principle of their division into compartments by party arches, supported by cast-iron girders and stanchions; but upon the same principle laid down by him in the case of Mark Brown's Wharf, also erected by us, in compliance with the 3rd clause of the 27th section of the Metropolitan Buildings Act; and which decision was arrived at after a very careful and ingenious defence made by Mr. Robinson, barrister, of the home circuit,* and which was subsequently confirmed by the decision of Mr. Arnold at the Westminster Police-court, *Re Elliott* and *Watney*, in which case Mr. Bodkin was retained, and for which decision, given in writing, I refer you to *Builder*, of April 2nd, 1859, p. 241. I am free to admit the horizontal arches erected by Mr. Humphrey, under the present circumstances, have signally failed; but I cannot admit that the cast-iron girders and stanchions, when the wrought-iron tension rods became red-hot, have had the slightest effect in throwing down the party-walls; for the party-walls in every instance are now standing as a rebuttal to that assertion.

I must also, from having been a close observer and an eye-witness of the spread of the fire, object to the supposition that the number of the windows in the several buildings was the cause; and I am quite prepared to submit the various elevations, showing the exceedingly small quantity of window surface in comparison with the superficies of the walls of the warehouses; but, as I before observed, the ignition took place from the immense mass of fire in the adjoining warehouses, to which everything succumbed, and which nothing could resist.

In reference to the wrought iron doors and the mode pursued by securing the plates to the wrought iron rails and stiles by means of rivets, practically I consider it one of the best modes that could be adopted for made doors; and I have since carefully examined several doors which have been exposed to the fiercest of the fire, and the rivets are as sound and as uninjured as at the very first, no displacement having taken place therein. Finally, in relation to pugged floors, or those quoted by Mr. Hesketh as having been *effectually* done by Alderman Humphrey, all the wood floors of the alderman's warehouses were constructed of fillets nailed to the joists, and stout slate slabs laid thereon, and the whole space between filled in with good concrete up to the top of the joists. These, no doubt, under common circumstances, would, in contrast with the ordinary floorings, resist for a much longer time the action of fire; but the result has proved that under the late extensive conflagration these also were useless; but at the same time there is no question the brick arches over the one pair-floor of the central building towards Compter-street offered such a temporary opposition to the flame as to check any further progress of the fire eastward; the materials in the warehouse at the corner of Hay's-lane and Compter-street being of a nature not so combustible as in the warehouses previously destroyed. To enter into any further details, or give opinion upon what is and what is not fire-proof, or to offer suggestions as to any prohibitory causes for future buildings, would be, at the present moment, and in this letter, out of place; but the Messrs. Scovell have already given us some instructions as to the rebuilding; which to some extent will, I hope, prevent a recurrence of such a calamitous fire.

WILLIAM SNOOKE.

A PRETTY SPECIMEN OF DICTATION.

SIR,—The masons employed at the erection of the new county court at Salford recently left their work because their master purchased some landings for the staircase which were worked on both sides. The following resolution was sent to their employer the following day:—

"Resolved,—That all the landings on Mr. Farrell's county court job that are faced on both sides be sunk a quarter of an inch, and that no more come on to the job worked."

That arrangement of the grievance being objected to, as being mischievous as well as useless, the unfortunate contractor was obliged to purchase peace by paying 6*l.* to "The Manchester Operative Stonemasons' Friendly Society," who then *kindly* allowed the workmen to return to their labour, on a pledge being added that "no more come on to the job worked."

ONE ASHAMED OF HIS MATES.

* See report in *Builder* May 22 1858, p. 35.

THE CONVERSAZIONE AT THE INSTITUTE.

DEAR MR. EDITOR,—I am a member of the R. I. B. A.; and, being married, I naturally look forward with joyous anticipation to the forthcoming *conversazione*, to which I shall naturally take my wife. Unfortunately, this lady, who equally looks forward to it, has just raised the most sinister forebodings in my marital bosom, by remarking that, as I usually come home from Conduit-street with a racking headache, it may possibly happen that the bad ventilation, and consequent foul air, may be equally injurious to herself. NOW, Mr. Editor, I apply to you to use your powerful voice, and warn the Council of the danger which lies lurking in wait for those most dear to them. Do try and persuade them to do the matter effectually, and at once, and in the most natural way; namely, to make a big hole in the ceiling; and not to waste money in palliatives and new-fangled inventions.—Believe me, yours truly (but not), A. FOWL. HEIR, A.R.I.B.A.

The Dovecote, Clapham.

ORGANIZATION FOR WORKING MEN.

SIR,—In consequence of receiving applications from working men, and thinking it probable some non-union organization is in existence (or, if not, that something of the kind is desirable), I venture, from your extensive acquaintance and known sympathy with the working classes, to assume that you can inform me whether or not this is the case.

If it be, perhaps you will kindly state, in your valuable and widely-circulated paper, where application should be made. If, however, nothing of the kind does exist, I beg to suggest that one of two courses be adopted, viz.:—

1st. That a society be formed of non-union men, the leading idea of which should be the formation of a registry of the names of those willing and anxious to work.

On this might ultimately be grafted a house of call, benefit club, and similar kindred institutions. At the same time all interference about hours of labour, wages, and other sources of dispute should be most rigorously excluded.

Or, 2nd. The elimination (or in plain language, the striking out) of all rules, from those of the existing unions which interfere with that right, which such rules challenge, of the working man to dispose of his labour to his own advantage.

Allow me to add one word on behalf of the common labourers, who, if such a society as I have indicated were formed, might justly partake of the advantages resulting from it, instead of being, as I believe they now are, left in a great measure to themselves.

FRED. WM. RUSSELL, Curate of Holy Trinity, Kentish Town.

*** The Working Men's Institute in Euston-road, with branch in York-road, Lambeth, probably affords means for the organization desired.

Books Received.

A House for the Suburbs; Socially and Architecturally Sketched. By THOMAS MORRIS, M.I.B.A. Second Edition. London: Simpkin, Marshall, & Co. 1861.

WE had occasion last year to notice the first edition of Mr. Morris's volume, and in doing so remarked that he might improve on so good an idea. That the idea is a good one is so far corroborated by the issue, already, of a second edition; and that the author has received our hint in good part, and has improved on it, we are glad also to observe. The volume is a handsome one, and a credit to its publishers. It may lead many to think with a useful end.

VARIORUM.

THE *New Quarterly Review* (Hardwicke) contains an interesting and pertinent article on "The Education of the Artist."——Rowney & Co. have published a little "Guide to the Art of Illuminating and Missal Painting," by W. & G. Audsley, architects. It contains a considerable amount of useful information, a number of illustrations in outline, and one as a title-page illuminated. In the next edition the Lamb of God may as well not be called Agnes Dei.——Under the title of "Thames Embankment: a few Reasons why a Low-level, self-made, 6½ mile Thames Thoroughfare should be preferred to a High-level tax-made 1½ or 1¾ mile Thames Thoroughfare: addressed to the Thames Embankment Commissioners," Mr. John Sewell, Assoc. Inst. C. E., the author has published his scheme for a "City

Thames, and West-end Railway," on piles over a sewer bank, with waterway over it to the wharfs and bed for barges, sewer on the south side, &c.; total estimated cost, 1,000,000*l.* It is regarded as a special advantage of this scheme that, besides being self-supporting, its revenues would pay the cost of construction, and also yield a dividend. Into its relative merits as regards the many other schemes under consideration, we cannot here enter.——"Map of London; with Guide for the Stranger and Visitor: designed and engraved for the Society for the Diffusion of Useful Knowledge. London: Stanford, Charing-cross." This seems to be a good map of its kind; but there is much to do by way of improvement in maps of London, especially in regard to names of streets and places, which are frequently illegible, or awanting altogether.——The *Sixpenny Magazine.* London: Ward & Lock, Fleet-street. Want of price-marks on books is too frequent; but the *Sixpenny Magazine,* price sixpence, is rather superfluous, though in the right direction: there is also a similitude of the actual coin of the realm to prevent mistake, but it looks much more like the new penny piece than the sixpence. Though the cover might have been a little more tasteful, however; and the engravings inside much reduced in quantity and a little improved in quality; this is really a wonderful sixpenny worth. It actually rivals in *quantity* the shilling magazines, which were so lately themselves a nine days' wonder. The table of contents, too, is a varied and attractive one, containing many more articles than we have space to give any notion of, even in abstract. Nevertheless, a further increase, beyond the 128 pages already given, is threatened in October next, when the paper duty comes off!——"The Right to Publish Official Documents: Proceedings in the case of Popham *v.* Pickburn, in the Court of Exchequer, Westminster. London: Pickburn, printer, Rosoman-street, 1861." This is a full report of an action for alleged libel contained in an official report of a medical officer of health, given, without note or comment, in the *Clerkenwell News,* and the proprietor of which was made the defendant in the action. Should the ruling of Mr. Baron Wilde in the case, that such a report is an unprivileged publication, be sustained, on hearing the rule *nisi* granted to set aside the verdict; a responsibility for the writings and sayings of public men, of a most serious nature, will be thrown upon the press. It will be the duty and the interest of the public to remove this at once.

Miscellanea.

ARCHITECTURAL ASSOCIATION DINNER.—We are requested to state that the annual dinner of the members of the Architectural Association will take place on Friday, the 12th instant, at the "Whittington Club," Arundel-street, Strand. A large attendance of members is hoped for.

MANCHESTER ARCHITECTURAL ASSOCIATION.—The usual meeting of this association was held at the rooms, George-street, on Wednesday evening, Mr. Alfred Darbyshire in the chair. Mr. O. J. Showell read the paper for the evening, on "Brickwork." After briefly alluding to the numerous evidences which we have of the very early introduction and general use of brickwork by the ancients, and a detailed description of the various kinds employed in the present day, with their several advantages and characteristics, the essayist called attention to the artistic beauty and effect which are secured by a judicious combination of bricks and ornamental tiles of various colours.

THE NEW COMET.—On Sunday night last, there suddenly, and, notwithstanding the delayed advent of the comet so much talked of some time ago, we may even say unexpectedly, appeared, in the northern heavens, and directly under the pole star, a comet of great magnitude as regards the nucleus. One of the greatest wonders, perhaps, connected with it is, how it reached its position on Sunday night without the lynx eyes of the astronomers having detected it on the way. However, it seems only to have then shown itself to any one; and, at the moment we first observed it on Sunday evening, in London, a correspondent of our own at Youghal, in Ireland, also saw it for the first time; so that, as no one observed it sooner, it must have been previously beclouded every night, we suppose, from the time it was capable of otherwise manifesting itself to the human eye. Astronomers no doubt are now busy tracing its path. They know little enough of comets, and will have to speak modestly.

MESSRS. THOMPSON'S ARCHITECTURAL PHOTOGRAPHS.—Messrs. Thompson (of Charing-cross), have issued eight more architectural photographs by Mr. F. Bedford, completing the delivery of their first year's series. These include the west porch of Higham Ferrers' Church, Northamptonshire; the west front of Peterborough Cathedral; central portion of west front of Lincoln Cathedral; tomb of Bishop Redmayne, Ely Cathedral; the west doorway of Lincoln Cathedral; Ely Cathedral, the Galilee and portion of west front; and general view of Lincoln Cathedral from south-east. Some of these are very beautiful; particularly the porch of Higham Ferrers' Church, and the Lincoln doorway. In one or two of them there is a want of uprightness in the lines, which is to be regretted. Mr. Bedford is, nevertheless, a master in his art; and this series, being moreover remarkably cheap, deserves to have a wide sale.

DESIGNS FOR THE FOREIGN OFFICE.—In the Commons last week, Lord J. Manners asked the First Commissioner of Works when he would submit the Gothic and Italian designs for the new Foreign-Office to the inspection of members, and whether he would name a day on which the decision of the House on the question of style should be taken? In reply, Mr. Cowper said that the designs by Mr. Scott, were now in the members' tea-room; and, as Lord J. Manners wished to have some Gothic plans, he had endeavoured to select those which he thought would be most likely to meet his lordship's views. The Gothic plans of last year were not within his reach, because they formed a portion of the exhibition of the Royal Academy. The vote would be taken in due course in the miscellaneous estimates, and notice would be given. Lord Elcho said that there were at present two designs in the tea-room, a Gothic and a Palatian. There were, however, intermediate designs mentioned by Lord J. Manners; and he wished to know whether there was any objection to their being exhibited. He also wished to know whether the Society of Early Gothic Architecture would allow their two designs to be exhibited.

RESTORATION OF A MEDIÆVAL TOWER AT DARNICK.—An old Border tower, or fortalice of the Middle Ages, at Darnick, has been restored to a habitable state as a dwelling. The tower of Darnick has been amongst the best-preserved of the "peel houses" in the south of Scotland, while the contemporary towers of Colmslie, Hillslap, Langshaw, and Torwoodlee, have fallen into picturesque ruins; and while of Buckholm, Blindlee, Langlee, Gala, and others, not a vestige remains, the old red and grey turrets of Darnick tower, nestling amid orchard trees, with slated roof and battlements entire, looking down over the village below, has long been a marked object in this part of the border. It belongs to a family named Heiton; and the author of "The Castles of Edinburgh," Mr. John Heiton, of Edinburgh, is the present proprietor, who has restored it. The interior, as described by the *Border Advertiser,* contains four large square apartments, one above the other, some of which have been refloored, and the walls plastered. In two of the rooms there are Mediæval sculptures. The original doors and locks are still in use, the former studded strongly with great iron nails, and the latter of vast size.

TRANMERE WATERWORKS.—The foundation-stone has been laid of the water-tower and reservoir for the waterworks at Tranmere, in Cheshire. The site of the reservoir is the highest elevation in the township. The reservoir is 70 feet square, and, when puddled and cemented round, will have 21 feet depth of water, or 640,000 gallons, about equal to four days' supply for the present population. Odd names are connected with the localities of the works. The reservoir is constructed on "The Old Lad's Croft," while the well is sunk in a triangular plot of land called "Vexation," at the head of "The Happy Valley." The well is 127 feet deep, and yields over 18,000 gallons an hour; equal to 45 gallons per day for each inhabitant of Tranmere. From the well the water will be carried up a new road called Fountain-street, up Yolk-of-Egg-lane to the reservoir. The water-tower will be in the Italian style of architecture. The engine-house and chimney—which will also have an appropriate architectural character—are in progress, and the whole of the works will be accomplished before winter. The contractors for laying the mains and pipes are Messrs. Crump, of Derby; for the well, Mr. John Hogarth, of Rock Ferry; and for the reservoir, engine, boiler-house, and chimney, Mr. James Routledge, of Tranmere. The engine and boilers are provided by Melling & Son, of Rainhill Ironworks. Mr. R. Rawlinson, C.E., is the engineer who planned the works.

RAILWAY RETURNS.—The traffic returns of railways in the United Kingdom for the week ending June 15 amounted to 546,680*l.*; and, for the corresponding week of last year, to 529,880*l.*; showing an increase of 16,800*l.* The gross receipts of the eight railways having their termini in the metropolis amounted to 248 276*l.*; and, for the corresponding week of 1860, to 244,641*l.*; showing an increase of 3,635*l.* The receipts on the other lines in the United Kingdom amounted to 298,404*l.*; and, for the corresponding week of last year, to 285,239*l.*; showing an increase of 13,165*l.*

FIREPROOF BUILDINGS.—It is instructive to know that poor Braidwood to the last protested against the use of cast-iron in the construction of our great river-side warehouses. In the paper he read at the Institution of Civil Engineers in 1849, "On Fireproof Buildings," he denounced the use of this untrustworthy material in the most decided manner; and pointed out that some great calamity must inevitably befall the men of the Fire Brigade, sooner or later, in their attempts to extinguish the vast conflagrations which were likely to take place in these extensive buildings. His own destruction has been the first testimony to the correctness of his views. The fire raging in one of these warehouses can only be compared to that of a blast furnace; and, in consequence, the cast-iron pillars speedily become red-hot; the water from the hose falling upon these pillars suddenly contracts and snaps them like so much glass; and, of course, the floors fall in at once. It is not necessary to give our testimony to the bravery of the men of the Fire Brigade; nevertheless, it is a well-known fact that they will not venture inside these buildings to play upon the fire; knowing that by so doing they are, like Samson, sure to bring the place about their heads without a possibility of their escape. Moreover, there is another danger to those outside these warehouses. The massive girders of cast-iron supporting the flooring of course expand with the heat; and no walls, however strongly built, can possibly withstand their lateral thrust; and down they come, to the destruction of those near at hand. We have no doubt whatever that this was the cause of the falling of the wall which killed poor Braidwood.—*London Review.*

TELEGRAPHIC PROGRESS: SUBMARINE CABLES. The report of the joint committee appointed by the Board of Trade to inquire into the best form of covering for submarine telegraph cables has just been issued. Up to the present time 11,364 miles have been laid, but only about 3,000 are actually working. The lines not working include the Atlantic, 2,200 miles; the Red Sea and India, 3,499 miles; the Sardinia, Malta, and Corfu, 700 miles; and the Singapore and Batavia, 550 miles. The committee give a succinct history of these as well as of all the others, and state their conclusions. The failure of the Atlantic is attributed to "the cable having been faulty, owing to the absence of experimental data; to the manufacture having been conducted without proper supervision, and to the cable not having been handled after manufacture with sufficient care;" and they add that "practical men ought to have known that the cable was defective, and to have been aware of the locality of the defects before it was laid." The Red Sea and India failure is considered to be attributable to the cable having been designed "without regard to the condition of the climate or the character of the bottom of the sea over which it had to be laid; and to the insufficiency of the agreement with the contractor for securing effectual supervision during manufacture, and control of the manner of laying." Looking at these circumstances, and similar ones in connection with other lines, the committee point out that the failures in every case are assignable to defined causes which might have been guarded against. They next detail the various methods hitherto employed for the construction and laying of submarine cables; and state the result of experiments in demonstrating the superiority of caoutchouc to gutta-percha for the insulating covering. They likewise express their opinion as to the best method of external protection, and the plans for laying and maintenance; and recommend the construction of a vessel specially for the purpose; which, they believe, when not employed in laying cables, would be found extremely useful for the ordinary purposes of commerce. In conclusion, they repeat their belief that the exercise of due care might have prevented all the unsatisfactory results that have thus far attended this branch of enterprise; and that, if proper regard be henceforth bestowed upon the question, the results will prove as successful as they have hitherto been disastrous.

GAS.—At the annual general meeting of the shareholders of the Kelso Gas Company, a dividend of 10 per cent. on the paid-up capital of the company was declared. The price was reduced from 7s. 6d. to 6s. 8d. per 1,000 cubic feet. That "the price of gas in this town is now lower than in any town in the district," however, is nothing, as yet, to boast of.

A FANNER.—A correspondent writes:—"I have recently inspected an ingenious piece of mechanism in the shape of a ventilator, intended as a present for the Governor-General of India, by the designer and inventor (James Bruce, Esq., late 33rd Regiment). It consists of a large gilt eagle, having the natural wings of this bird attached to it. It is suspended from the ceiling like a chandelier; and, being wound up by machinery like an ordinary clock, the wings are kept fanning for twenty-four hours. The air in the room thus becomes quite cool and pleasant.

ROYAL ITALIAN OPERA-HOUSE.—A brilliant season here is drawing to a close; and they who would hear Verdi's new opera, *Un Ballo in Maschera* (wherein Madame Penco and Signor Mario are most excellent), and see the setting of Grisi and the rising of Patti, must make haste. There are several compositions in *Un Ballo* of great originality and beauty, and the *mise en scène* is charming. Madlle. Patti, who is an immense gain, essays, on (this) Thursday night, *La Traviata*. The volunteer ball, which, under the management of Mr. Gye, was last year so successful, is announced for Friday, the 12th.

SANITARY APPLIANCES COMMITTEE: THE INTERNATIONAL EXHIBITION.—Her Majesty's Commissioners for the International Exhibition of 1862 have requested the following gentlemen to act on a committee for sanitary appliances in connection with Class X. (civil engineering, architectural machines, and building contrivances):—The Earl of Shaftesbury, Viscount Ebrington, the Right Rev. Lord Bishop of Bath and Wells, the Right Hon. the Lord Mayor, Sir Morton Peto, Bart., M.P., Mr. John F. Campbell, Mr. E. Chadwick, C.B., Mr. W. Fairbairn, LL.D., Captain D. Galton, R.E., Mr. G. Godwin, F.R.S., Mr. Philip Holland, Mr. Owen Jones, Dr. Letheby, Mr. J. Simon, F.R.S., Mr. R. Rawlinson, C.E., Mr. A. Strutt, Dr. Sutherland, M.D., and Mr. T. Twining, jun.

THE LABOURING CLASSES.—The Society for Improving the Condition of the Labouring Classes has held its seventeenth annual meeting at Willis's Rooms, King-street, St. James's. The Earl of Shaftesbury presided. The report, read by the Rev. J. B. Owen, stated that the buildings of the society were generally occupied by a quiet and orderly tenantry, and that the rules established had met with the approval of the inmates. There had not been any new erections or purchases of bases or sites of additional plots during the past year; the object of the society not being so much to multiply buildings of the same average character of domiciliary reform as to set up models in various parts of the metropolis, with a view to the stimulation of private or social enterprise in the same direction. An abstract of the cash account, from December, 1859, to December, 1860, showed the receipts of the society amounted to 6,935*l.* 5s. 9d., and the payments (including the repayment of a loan of 850*l.*) to 6,798*l.* 0s. 2d., leaving a balance in hand of 137*l.* 5s. 7d. By an estimated value of the property belonging to the society, there appeared to be an excess of assets over liabilities, of 20,342*l.* 14s. 5d.

ROYAL HORTICULTURAL SOCIETY.—The bands formed by the Metropolitan Police (of which we first informed the public) played for the first time in public on the 29th ult., in the gardens of the Horticultural Society, South Kensington, and performed remarkably well. The gardens are falling rapidly into shape, every week making a striking difference. On the 10th instant a grand rose show is to be held, which promises to be very attractive. On this occasion admission for the gardeners of Fellows to view the arrangements on the morning of the show, before 8 o'clock, may also be had by a written application to Mr. Eyles. A number of the statues and busts of generals and other eminent men connected with the career of the late Duke of Wellington, which have been prepared for the Wellington College, and have been lent for the purpose, will be exhibited. These are formed by the electrotype process instead of casting. On the 20th, the first arch of the nave of the Great Exhibition building is to be raised by H.R.H. the Prince Consort, with some ceremonial; and a *déjeûner* is to be given in the large conservatory by Messrs. Kelk & Lucas, the contractors, to a large number of gentlemen interested in the Exhibition. Great activity prevails in the society.

"ROME AT EASTER."—Our contemporary, the *Athenæum*, has admitted a letter from the author of a book about Rome, complaining that the writer of a communication printed in the *Builder* of April last, has "plundered" him "of whole pages." He continues,—"The name of the highwayman is known: he had crape over his face, and was clumsily disguised as an architectural student now in Italy." What he means by this we do not exactly understand. The communication was precisely and literally what was stated,—part of the diary of an architectural student, the son of an architect well known to many of our readers. It was not intended for publication, and came to us direct from Italy. What the writer of it may have to say to the complaint, we do not know. It must, at any rate, be greatly exaggerated, since the whole communication occupies little more than two of our columns!

THE TURNER PICTURES.—In the House of Lords, last week, Lord St. Leonards asked the President of the Council whether any steps had been taken to provide a separate gallery in connection with the National Gallery for the Turner pictures. His lordship objected to their being allowed to remain at the South Kensington Gallery, on account of the use of gas there. He had ascertained, he said, that a gallery could now be erected in direct communication with the present building in Trafalgar-square, and hoped a public grant would not be objected to. Earl Granville, in reply, defended the present position of the pictures, and thought their safety sufficiently secure from the mode of lighting by gas at the Kensington Gallery. He thought it not advisable to remove the pictures. Lord Overstone also urged the erection of a gallery, in Trafalgar-square; and Lord Monteagle, as a trustee, expressed dissatisfaction with the present position of the pictures. The Earl of Ellesmere, from his own experience, deprecated the idea that gas was either so dangerous or so deleterious as was represented.

AN ARCHÆOLOGICAL EXCURSION FROM BIRMINGHAM.—The first local excursion of the present season was to Stratford-on-Avon. The party, upwards of 100 in number, proceeded to the birthplace, where Mr. S. Timmins described the history and changes made in the house. The visitors next proceeded to the theatre, in which the newly-found portrait of the poet was exhibited, and a coloured cast of the bust placed near it by Mr. W. O. Hunt, so that the two might be readily compared. Mr. S. Timmins briefly sketched the history of the former portraits of Shakspeare, and expressed his opinion that the bust in the church was the most authentic record of the poet's features. It was erected by his own friends in his own town, soon after his death. It was believed by many of the chief sculptors to be modelled from a posthumous cast. It was found on close examination to be very correctly executed in the portions which a cast would give, but carelessly elsewhere; and, for that and other reasons, might be taken as the best record of the poet which had come down to us. Mr. Sebastian Evans, M.A., then proceeded to explain why he had come to the conclusion that the picture was painted before the bust, and not from it, as some had ventured to suggest. The large number of half-tints which none but a very great artist could have introduced unless painting from life; the fine painting of the eyes; the delicate manipulation of the mouth, and many other minute touches, had convinced him that the portrait was not copied from the bust, but from the ever-living poet. A short discussion followed, in which Mr. C. H. Bracebridge expressed the thanks of the Birthplace Committee to Mr. Hunt for his gift. Professor Chamberlain, Mr. Jabet, and Mr. Dawson also took part in the discussion. The church was next visited, and its characteristics described by Professor Chamberlain. Mr. S. Timmins then briefly described the Clopton Chapel. He referred to the apparent re-marriage of Mrs. Shakspeare, asshown by the entry of her death in the register, and to several other matters relating to the monuments in the church. The dinner took place at the Corn Exchange, Mr. C. H. Bracebridge in the chair. Mr. George Dawson, M.A., delivered an address on Shakspeare. After dinner, the visitors dispersed; some to Shottery, some to the Avon and its boats, and some to the churchyard on the Avon-bank, to stroll under its elms. The excursion proved to be the best the association has yet enjoyed.

TENDERS

For completion of twelve houses, Kensington. Mr. Sim, architect:—

Scott	£1,621	15	0
Fish	1,559	0	0
Elliott (one house omitted)	1,557	0	0

For house and premises, Hornsey-road, for Mr. John Broad. Mr. Francis Cross, architect:—

Manby & Rogers	£985	0	0
Baker	963	0	0
Sleap	839	0	0
Sharpington & Cole	787	0	0
Rankin	750	0	0
Fowler	711	0	0
Ashton	678	0	0
Macfarlane (accepted)	596	0	0

For a warehouse at the corner of Cannon-street and Bow-lane, City. Mr. N. S. Joseph, architect. Quantities by Mr. W. F. Meakin:—

Mansfield & Sons	£2,525	0	0
Lawrence & Sons	2,470	0	0
Conder	2,289	0	0
Hill, Keddell, & Robinson	2,286	0	0
King	2,265	0	0
Ashby & Horner	2,250	0	0
Hedges	2,187	0	0
Rivett	2,173	0	0
Newman & Mann	2,157	0	0
Browne & Robinson	2,155	0	0

For the erection of a coach-house, stable, &c., at Parkhouse, Woodford, Essex. Mr. J. H. Rowley, architect:—

Davey	£270	0	0
Crofts	250	0	0
Carter	240	0	0
Salter	233	0	0
Salmon	224	0	0

For building new waiting-room, and general repairs, to Farringdon Dispensary, Bartlett's-buildings. Mr. Fenton, architect:—

Wagstaffe	£458	0	0
Pritchard	439	0	0
Sands	428	0	0
Lester	377	0	0
Mallcott, Brothers	324	0	0

For additions and alterations to Finchley Chapel. Mr. Searle, architect:—

Brass	£518	0	0
Plowman	500	0	0
Sands	460	0	0
Howlett & Brown	372	0	0

For alterations to the "Bull Inn," Market-place, Norwich. Mr. Barry, architect:—

Woodingham & Spinks (accepted)	£400	0	0

For New Church, Crouch End, Hornsey. Mr. A. W. Blomfield, architect. Quantities supplied by Messrs. Hunt & Steward and Mr. J. A. Bunker:—

Hill & Son	£5,834	0	0
Child, Son, & Martin	4,737	0	0
Bird	5,721	0	0
Holland & Hannen	5,694	0	0
Myers	5,605	0	0
Turner & Sons	5,529	0	0
Carter	4,847	0	0

For cottage villa, at Forest Hill, for Mr. W. T. Gylby. Mr. Wm. Nunn, architect:—

Turner	£1,300	0	0
Wooten	1,287	0	0
Dearsley	1,282	0	0
Jones	1,275	0	0
Notley	1,250	0	0
Day (accepted)	1,190	0	0

For repairs, No. 45, Russell-square. Mr. Wm. Nunn, architect.—

Wooten	£439	0	0
Day	337	0	0
Jones	302	0	0
Wills	299	0	0
Dearsley	295	0	0
Newman & Mann (accepted)	258	0	0

For the first portion of the repairs to Hale's free grammar school, Hertford. Patron, Lady Palmerston. Mr. W. Wilds, architect:—

Rayment	£347	0	0
Collins	296	0	0
Norris	282	0	0

For Birmingham cemetery. Mr. R. Clarke, architect, Nottingham. Quantities taken by Mr. Cox, Birmingham:—

Showell	£8,110	0	0
Grove	7,998	0	0
Smith	7,500	0	0
Chambers & Hilton	7,500	0	0
Well & Sons	7,016	0	0
Godfrey	7,300	0	0
Nelson & Co.	7,675	0	0
Hardwicke & Sons	7,455	0	0
Jones	6,770	0	0
Wright (accepted)	5,975	0	0

For new dining-hall, Clewer House, Windsor. Mr. Sim, architect:—

Snowball	£430	0	0
Hollis	409	0	0

For completion of eight houses, Kensington. Mr. Sim, architect:—

Handby	£2,625	0	0
Fish	2,620	0	0
Cowland	2,599	0	0

For the making up of road, with paving curb and channel, Warwick-gardens, Kensington:—

Cowland	£701	0	6
Turner	638	5	8

The committee for the erection of St. Philip's Parsonage House, Maidstone, met last week to receive tenders for the erection of a new parsonage. There were several tenders, but the tender of Mr. Chambers, of Maidstone, and Mr. Waylar, of Rochester, were alike, each 910*l.*: the committee accepted the tender of Mr. Waylar.

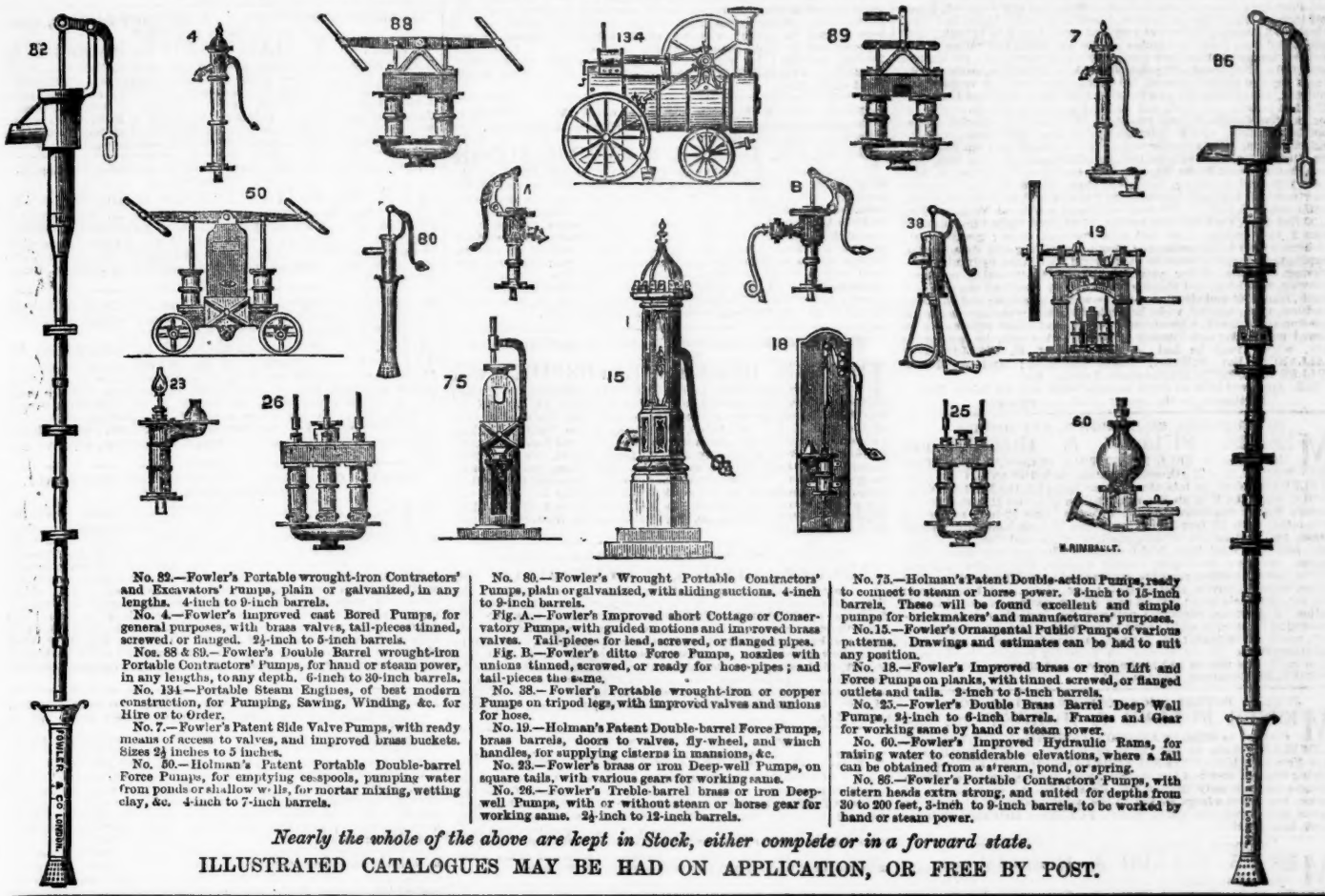
A SUBSCRIBER.

BENJAMIN FOWLER & CO., WHITEFRIARS-ST., FLEET-ST., LONDON,

MANUFACTURERS OF PUMPS OF EVERY DESCRIPTION,

PORTABLE OR FOR FIXTURE, FOR DEEP OR SHALLOW WELLS, CUTTINGS, TANKS, &c., FOR MANUFACTURING, DOMESTIC, AGRICULTURAL, CONTRACTING, AND ALL OTHER PURPOSES;

TO BE DRIVEN BY HAND, HORSE, WATER, WIND, OR STEAM POWER, AND SUITABLE FOR HOME USE OR EXPORT.



No. 82.—Fowler's Portable wrought-iron Contractors' and Excavators' Pumps, plain or galvanized, in any lengths. 4-inch to 9-inch barrels.

No. 4.—Fowler's Improved cast Bored Pumps, for general purposes, with brass valves, tail-pieces tinned, screwed or flanged. 2½-inch to 5-inch barrels.

Nos. 88 & 89.—Fowler's Double Barrel wrought-iron Portable Contractors' Pumps, for hand or steam power, in any lengths, to any depth. 6-inch to 30-inch barrels.

No. 134.—Portable Steam Engines, of best modern construction, for Pumping, Sawing, Winding, &c. for Hire or to Order.

No. 7.—Fowler's Patent Side Valve Pumps, with ready means of access to valves, and improved brass buckets. Sizes 2½ inches to 5 inches.

No. 50.—Holman's Patent Portable Double-barrel Force Pumps, for emptying cesspools, pumping water from ponds or shallow wells, for mortar mixing, wetting clay, &c. 4-inch to 7-inch barrels.

No. 80.—Fowler's Wrought Portable Contractors' Pumps, plain or galvanized, with sliding suctions, 4-inch to 9-inch barrels.

Fig. A.—Fowler's Improved short Cottage or Conservatory Pumps, with guided motions and improved brass valves. Tail-pieces for lead, screwed, or flanged pipes.

Fig. B.—Fowler's ditto Force Pumps, noozles with unions tinned, screwed, or ready for hose-pipes; and tail-pieces the same.

No. 38.—Fowler's Portable wrought-iron or copper Pumps on tripod legs, with improved valves and unions for hose.

No. 19.—Holman's Patent Double-barrel Force Pumps, brass barrels, doors to valves, fly-wheel, and winch handles, for supplying cisterns in mansions, &c.

No. 23.—Fowler's brass or iron Deep-well Pumps, on square tails, with various gears for working same.

No. 26.—Fowler's Treble-barrel brass or iron Deep-well Pumps, with or without steam or horse gear for working same. 2½-inch to 12-inch barrels.

No. 75.—Holman's Patent Double-action Pumps, ready to connect to steam or horse power. 3-inch to 15-inch barrels. These will be found excellent and simple pumps for brickmakers' and manufacturers' purposes.

No. 15.—Fowler's Ornamental Public Pumps of various patterns. Drawings and estimates can be had to suit any position.

No. 18.—Fowler's Improved brass or iron Lift and Force Pumps on planks, with tinned screwed, or flanged outlets and tails. 2-inch to 5-inch barrels.

No. 25.—Fowler's Double Brass Barrel Deep Well Pumps, 2½-inch to 6-inch barrels. Frames and Gear for working same by hand or steam power.

No. 60.—Fowler's Improved Hydraulic Rams, for raising water to considerable elevations, where a fall can be obtained from a stream, pond, or spring.

No. 86.—Fowler's Portable Contractors' Pumps, with cistern heads extra strong, and suited for depths from 30 to 200 feet, 3-inch to 9-inch barrels, to be worked by hand or steam power.

Nearly the whole of the above are kept in Stock, either complete or in a forward state.

ILLUSTRATED CATALOGUES MAY BE HAD ON APPLICATION, OR FREE BY POST.

JOHN WARNER & SONS, 8, CRESCENT, CRIPPLEGATE, LONDON, E.C.

BELL AND BRASS FOUNDERS, TO HER MAJESTY.

HYDRAULIC ENGINEERS, BRAZIERS, MANUFACTURERS of PUMPS, COCKS, and CLOSETS of EVERY DESCRIPTION, for EITHER HIGH or LOW PRESSURE. BATHS, GARDEN and FIRE-ENGINES, STEAM WORK, &c.

No. 35.

WARNERS' PATENT CAST IRON PUMP,

FOR RAISING WATER FROM WELLS not exceeding Twenty-five feet in depth.

Diameter of Barrel.	Height.		£	s.	d.
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe, as required.	1	1	0
2½ „ long	3	3	1	10	0
3 „ ditto	3	6	2	4	0
3½ „ ditto	3	6	2	9	0
4 „ ditto	3	6	2	18	0
2½ „ short, with 15 feet of lead pipe attached, ready for fixing			2	0	0
2½ in. long ditto ditto			2	14	0

This Pump is fitted with J. W. & Sons' Patent Vibrating Standard, Improved Revolving Cap, Metal Bucket, and Brass Suction Valve. By means of the Revolving Cap, the Handle can be shifted to the right or left hand, or opposite the Nose as desired.

No. 60.

WARNERS' PATENT

BRASS VIBRATING STANDARD LIFT and FORCE PUMP, for the supply of Cisterns, &c. is recommended for the simplicity of its construction, and the ease with which it works.

By the introduction of the Vibrating Standard, the cumbrous carriage and expensive slings and guides are unnecessary, rendering the price considerably less than Pumps made on the old plan.

2½ inch	£6	0	0
3 „	7	5	0
3½ „	8	0	0

Larger sizes when required.

Fitted to the best Plank, 5 ft. 9 in. high.

Where strength is not an object, a lighter Pump can be supplied.

2½ inch	£4	15	0
3 „	5	15	0

WARNERS'

BATHS can be had of either Copper, Zinc, or Galvanized Iron. Price, from 3l. 10s. each. J. W. & SONS also supply all Fittings requisite for the same.

A PRIZE MEDAL FOR BELLS Was awarded to JOHN WARNER and SONS, AT THE GREAT EXHIBITION IN 1851.

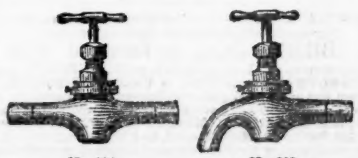
Bells for Churches, Chapels, Colleges, Schools, Turret Clocks, &c. cast of any size, note, or weight, singly or in peals.

TUNED BY MACHINERY.

Old Bells recast or taken in exchange.

An experienced Bellhanger sent to inspect, report, and advise on the state of peals out of repair. Estimates furnished for new Oak Frames and Fittings, and for repairing old ones.

House Bells, Hand Bells, Alarm Bells, Ships' Bells, Horse, Cattle, and Sheep Bells.



No. 384. No. 383.

WARNERS' HIGH PRESSURE COCKS

are made with gland Stuffing-boxes and Loose Valves. They can always be made sound after wear, and re-leathered with facility.

All Warners' Cocks are tested with Hydraulic Pressure.

Improved large Screw-down Cocks, suitable for either Steam or Water, are recommended to the notice of Water Companies as an efficient substitute for the ordinary Sluice Cock.

J. WARNER & SONS'

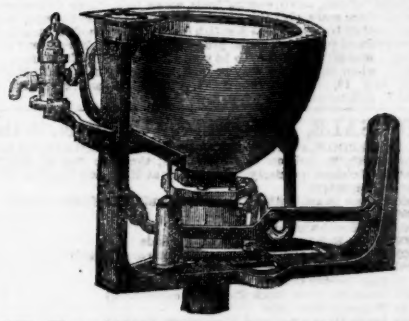
PRICED

ILLUSTRATED CATALOGUE

WILL BE FORWARDED POST-FREE ON APPLICATION.

JOHN WARNER & SONS desire to draw attention to their PATENT PAN and VALVE CLOSETS, with Supply and Regulating Valve for High or Low Pressure.

The PATENT VALVE is connected with a Bracket, which may be attached either to a Pan or Valve Closet, as desired. The Valve being constructed to close gradually after the handle is down, gives a sufficient supply of water to cleanse the basin, and leaves enough in the pan to ensure an air-tight joint. Any number of these closets may be fixed to one main or service pipe.



No. 145½.—Warners' Spring Valve Closet on Iron Frame, with vulcanised India rubber valve, and patent supply valve attached, plain handle, and white basin £3 15 0
Sunk handle extra 0 3 0
Blue basin, extra 0 1 6

No. 148½.—Warners' Bright Pan Closet, with Patent Supply and Regulating Valve attached, plain handle, white basin..... £3 0 0
Sunk Handle, extra 0 2 0
Blue Basin, extra 0 1 0

The above Prices are subject to a liberal discount.

JOHN WARNER & SONS, 8, CRESCENT, CRIPPLEGATE, LONDON, E.C.

SALES BY AUCTION.

By order of J. Jay, Esq.—To Engineers, Founders, Saw-Mill Proprietors, Builders, Joiners, Cabinetmakers, Ironmongers, Masons, and Others.

MESSRS. FULLER & HORSEY are instructed to SELL by AUCTION, on WEDNESDAY, JULY 10, and following days, at ELEVEN each day, at the WORKS, Macclesfield-street, City-road, in lots, the capital well-assorted and seasoned STOCK of CUT STUFF, and the Stores in the Ironmonger's, Painter's, and Plumber's Departments, including 12,000 feet dry wainscot, ½ inch to 2 inches; 14,000 feet pitch pine, ½ inch to 1½ inch; 10,000 feet pine, ½ inch to 3 inches; 15,000 feet prepared deal, 1 inch to 1½ inch; 5,000 feet milled deal, ¾ inch to 2 inches; 60,000 feet white and yellow deal, ½ inch to 3 inches; 500 feet teak planks 2,000 8-feet arris rails, 150 bundles laths, 500 scaffold boards, 300 poles, 500 put logs, 20 ladders, scaffold cords, 2 tons dry and ground colours, 150 gallons copal and oak varnish and gold size, 150 gallons oils and turps, 2 tons sheet lead and lead pipe, 2,000 feet polished, ground, and rolled plate-glass, and sheet-glass, 50 doz. mortise, drawback, and rim locks, 20 doz. cupboard locks, 40 doz. mortise, Norfolk, and Suffolk latches, 20 doz. brass butts, wrought and cast butts, 1,500 gross screws, 10 tons wrought and cut nails, 100 doz. files, 40 doz. brass axle pulleys, japanned goods, shutter bars, buttons, hat and coat hooks, &c. sash line, emery and glass paper, rain water pipe and guttering, heads and shoes, bell work, and a regular assortment of builders' ironmongery; blocks and falls, chains, crabs, bottle and rack jacks, 1,000 feet tooled and self-faced York paving, 1,000 feet dove, Purbeck, Bib-lacombe, black, and veined marble slab; from 1 to 3 inches; 1,500 feet cube Portland stone; granite curb, a 6-horse power table condensing steam-engine, egg-end steam boiler, shaping machine, 6-inch centre back-geared slide-lathe, hydraulic pipe-proving machine, girder proving machine, thicknessing machine, grooving, matching, and planing machine, an excellent circular saw bench, frame pit and circular saws, powerful punching and shearing machine, vices, smiths' tools, Burchfield's patent weighing machine, cast-iron stove, truck, a nearly new cupola, and other effects.—To be viewed on Monday and Tuesday previous to the sale, by catalogues only, which may be had at 6d. each of H. WELLINGTON VALLANCE, Esq. Solicitor, Tokenhouse-yard; and of Messrs. FULLER & HORSEY, Billiter-street, London, E.C.

N.B. Approved bills at three months' date will be taken from purchasers to the extent of 50*l.* and upwards.

TO ENGINEERS, MILLWRIGHTS, AND OTHERS.

MESSRS. FULLER & HORSEY are instructed to SELL by AUCTION, at the CANAL BRIDGE IRON WORKS, New North-road, Hoxton, on MONDAY, JULY 15th, at ELEVEN o'clock, in lots, the premises being let, the MACHINERY, TOOLS, and STOCK of an Engineer, Millwright, and Manufacturer of Jucke's Patent Smoke-consuming Furnace. One 12-inch self-acting slide-lathe, with 15 feet 6 inch bed; two 12-inch back geared slide-lathes, two foot-lathes, drilling-machine, vices and benches, stocks, taps, and dies, steel tools, highly-finished 6-horse power steam beam engine, two new oscillating donkey engines, bright shafting and pullies, Lever's cutting machine, cutting and punching machine, two forges, bellows, anvils, smiths' tools; cast, shear, and blister steel; rod, bar, and plate iron; several tons of new castings, a valuable collection of patterns, including patterns for Juckes's patent smoke-consuming furnace, in eight sizes; steam engine and wheel patterns, crab, scales and weights; gas fittings, electric telegraphic apparatus, and other effects. To be viewed on Saturday previous to the sale, when catalogues may be had at the Works, and of Messrs. FULLER & HORSEY, Billiter-street, London, E.C.

JUCKE'S PATENT SMOKE-CONSUMING FURNACES.

MESSRS. FULLER & HORSEY are instructed to SELL by AUCTION, on MONDAY, JULY 15, 1861, at TWELVE o'clock, at the Canal Bridge Works, New North-road, eight New (JUCKE'S PATENT) SMOKE-CONSUMING FURNACES, varying from 21 feet to 4 feet surfaces, with gearing complete. These furnaces are not only thoroughly efficient for the consumption of smoke, but effect a large saving in the consumption of fuel.—To be viewed, and Catalogues had of Messrs. FULLER & HORSEY, Billiter-street, London, E.C

FRENCH MINERAL TAR AND ASPHALTE.

MESSRS. FULLER & HORSEY are instructed to SELL by AUCTION, on TUESDAY, JULY 16, at TWELVE, at the Chymical Works, Bow Common, in lots, 20 casks MINERAL TAR, and 1,800 blocks ASPHALTE, ex Ganymede, Johnson, from Rouen: lying at Springall's Wharf, where the bulk may be viewed.—Catalogues may be had of Messrs. FULLER & HORSEY, Billiter-street, E.C.

TO CONTRACTORS, BUILDERS, AND OTHERS.—*Re* Moxon.

MESSRS. FULLER & HORSEY are instructed by the Inspectors to SELL by AUCTION, on TUESDAY, JULY 23rd, 1861, at ELEVEN o'clock, at the WORKS, near Wick-lane, Old Ford, about mid-distant from Victoria-park and Bow stations, Contractor's PLANT, UTENSILS, and STORES, 50 loads capital French timber (principally new), 3,000 feet 6-inch die square timber, 4,000 6-inch die square struts, 3 feet to 12 feet; 250 wheeling planks, 400 pavvie and crowding barrows, 200 brick-boxes, 400 centres, 20 screws, 20 well-winches, 50 scaffold poles, 40 box horses 50 loads useful square timber, trestles, ladders, troughs, mortar-boards, gauging-boxes, 20 water-butts, 25 wrought-iron pumps; pile engine, with crab and monkey; 1,000 Staffordshire blue bricks, 5 tons new bar iron, 10 tons useful bar and rod iron, 20 new cast steel gratings, 2 tons hoop iron, 100 rubbish wheels, four grindstones, 200 glazed sanitary pipes, traps, bends, junctions, and syphons; fittings of smith's shop, forge bellows, anvil, smiths' tools, screw-jack, three double and single-purchase crabs, six pairs iron blocks and falls, chain slings, bars 200 feet leather bands, 30 tons Kentish ragstone, Gwynne's 6-inch delivery centrifugal pump, shafting, plummer blocks, &c. 300 cement and lime bags, and other effects.—To be viewed on MONDAY previous to the Sale, when catalogues may be had, at the Works of F. MAYNARD, Esq. 19, Bread-street, E.C.; and of Messrs. FULLER & HORSEY, Billiter-street, London, E.C.

FOR SALE, by PUBLIC AUCTION, in the SALE-ROOM, at F. K. BARNES & SONS' TIMBER-YARD, Canons' Marsh, Bristol, on WEDNESDAY, the 17th day of JULY, 1861, at ONE o'clock precisely. Luncheon at Half-past Twelve. For account of Importers.

35,000 Spruce Deals, Battens, Scantling, and Ends (fresh arrival)
4,000 Quebec Pine Deals
2,000 St. Petersburg Deals
4,000 Onega Red Deals, Battens, and Boards
2,000 Norway Red and Whitewood Battens and Boards
500 Loads Quebec Board Pine (fresh Timber)
30 Logs Quebec Oak (fresh Timber)
100 Loads St. John Birch Timber (fresh arrival)
50 Wainscot Oak Logs
300 Loads Danzic Red and Whitewood Timber
60 Loads Dantzic Oak
100 Loads Pitch Pine Timber
250 Loads Swedish Timber
300 Fresh Norway Masts
350 Fresh 4 to 6 inch Spars
300 Fresh 4 inch ditto
300 Ditto Rickers
30 Fathoms Dantzic and St. Petersburgh Lathwood
30 Fathoms Quebec Lathwood
14 Logs African Oak
2,000 Memel Pipe Staves
1,000 Quebec Cull Pipe Staves
2,000 Quebec W. I. P. Staves
8,000 New York Hogshead Staves
A Quantity of Pitch Pine and Dantzic Plank
500 Manufactured Ash Oars
750 Manufactured Fir Oars
With other Goods.
Also,
50 Logs Honduras Mahogany, *ex* "Victoria."

Catalogues will be issued on the Week of Sale.

F. K. BARNES & SONS, Brokers.

Canons' Marsh, Bristol, July 3rd, 1861.

IN BANKRUPTCY.

MESSRS. CUTTEN & DAVIS are instructed by the Assignees of Mr. Dalton to SELL by AUCTION, at BRACKNELL, ASCOT, and CHILDOWN, on TUESDAY, JULY 9th, at ELEVEN for TWELVE, a quantity of BUILDING MATERIALS: comprising 550 scaffold boards, 180 poles, putlogs, 27 dozen cords, benches, doors, sashes, mouldings, quartering, ladders, and numerous useful items.—To be viewed on the day of sale. Catalogues to be had of Messrs. HOWARD, HALSE, & TRUSTRAM, Solicitors, 66A, Paternoster-row; and of the Auctioneer, 16, Ludgate-hill.

METROPOLITAN IMPROVEMENTS.—SOUTHWARK and WESTMINSTER COMMUNICATION.—NINTH CLEARANCE SALE.

PULLEN, HORNE, & EVERSFIELD are instructed by the Metropolitan Board of Works to SELL by AUCTION, on the PREMISES, on MONDAY, JULY 8, and following day, at ELEVEN for TWELVE, in lots, all the valuable BUILDING MATERIALS, Fixtures, and Fittings-up of about 30 Houses, Workshops, Warehouses, and other premises, in Castle-street, Worcester-street, and Southwark-square, Southwark Bridge-road; comprising about 750,000 capital bricks, a large quantity of slates and slating boards, prime timber in roofs and floors, sound flooring boards, 350 pairs glazed sashes, cupboard fronts, marble and other chimney-pieces, doors, folding gates, York pebble and clinker paving, several tons of lead in gutters, cisterns, sinks and pipes, stoves, ranges, coppers, and a large mass of useful and valuable materials and fittings up.—May be viewed, and catalogues had of PULLEN, HORNE, & EVERSFIELD, 80, Fore-street, City, E.C. and 40, Parliament-street, S.W.

LONDON, CHATHAM, AND DOVER RAILWAY.—Metropolitan Extensions.—Eighth Clearance Sale.—Bedford-road, Clapham, and Park-grove, Brixton-road.

PULLEN, HORNE, & EVERSFIELD are instructed by the Directors to SELL by AUCTION, on the PREMISES, on THURSDAY, JULY 11, at TWELVE, in lots, all the excellent BUILDING MATERIALS of FIVE newly-erected semi-detached RESIDENCES, situate in Bedford-road, Clapham (near the Bedford Arms), and in Park-grove and Shepherd's-lane, Brixton-road; comprising nearly new brickwork, slated roofs, capital timber and flooring boards, sashes, doors, chimney-pieces, and a variety of interior fittings up of a modern and superior character, the houses having been built only a very short time.—May be viewed the day previous. Catalogues had at Mr. VIGERS'S Offices, 3, Frederick's-place, Old Jewry; and of PULLEN, HORNE, & EVERSFIELD, 80, Fore-street, City, E.C. and 40, Parliament-street, Westminster, S.W.

WESTMINSTER.—Final Sale of the Stock in Trade of a Timber Merchant.

PULLEN, HORNE, & EVERSFIELD will SELL by AUCTION, on the PREMISES NORWAY WHARF, Millbank-street, Westminster, on FRIDAY, JULY 12, at TEN for ELEVEN, in consequence of the premises being let, the final portion of the STOCK and EFFECTS, comprising whole Dantzic timber, yellow and white planks, deals and battens, prepared floor boards and battens, cut stuff, mahogany and wainscot planks, dry wide pine boards, laths, &c.; also the cart-horses, carts, stone trucks, timber waggons, ladders, barrows, and other effects.—Approved bills will be taken from purchasers of the stock above 25*l.*—May be viewed the day previous, and catalogues had on the premises, and of PULLEN, HORNE, & EVERSFIELD, 40, Parliament-street, Westminster, and 80, Fore-street, City.

PALACE ROAD, LAMBETH.—To Builders and Others.

PULLEN, HORNE, & EVERSFIELD are instructed by the proprietor to SELL by AUCTION, at the WHARF adjoining the Saw Mills, Palace-road, Lambeth, on TUESDAY and WEDNESDAY, JULY 23 and 24, at TEN for ELEVEN, the following dry seasoned goods, viz.—2,500 white and yellow deals, 500 ditto planks, 1,300 ditto battens, 1,000 ditto spruce deals, 10,000 white and yellow floor-boards, 350 crown pipe staves, 10 planks of Italian walnut, 15 pieces of best Dantzic timber, and other goods.—May be viewed three days previous, and catalogues had on the Premises, or sent by post (free) on application to PULLEN, HORNE, & EVERSFIELD, 40, Parliament-street, Westminster, S.W. and 80, Fore-street, City.

GREEN LANES, STOKE NEWINGTON.

MR. A. RICHARDS will SELL by AUCTION, on the PREMISES, opposite the New River Company's Engine-house, a short distance from the Manor House, on TUESDAY, JULY 16, at ONE o'clock, about 1,250,000 excellent new BRICKS, including malm, paviors, pickings, washed and common stocks, half-and-halves, place and shuffs, a quantity of bars and bats, brickmaking plant, and the erection of stables, with pantile roof, &c. May be viewed the day preceding. Catalogues obtained of the Foreman, on the Premises; and of the Auctioneer, Tottenham.

TO BE SOLD, pursuant to an Order of the High Court of Chancery, made in a cause "Hocken v. Battley," with the approbation of the Vice-Chancellor Sir Richard Torin Kindersley, in one lot, by Mr. REYNOLDS, the person appointed by the said Judge, at the AUCTION MART, in the City of London, on WEDNESDAY, the 24th day of JULY, 1861, at ONE o'clock precisely, a substantially built PRIVATE RESIDENCE, situate in the Pownall-road, and at the corner of Marlborough-road, Queen's-road, Dalston, in the county of Middlesex. Adjoining are large and commodious Builder's Premises, with excellent Carpenter's Workshop and lofty drying shed under, cart shed, stable, and timber stage. The whole of the premises are at present unoccupied, and have a frontage of nearly 160 feet on the Pownall-road, and a depth of 230 feet to a frontage on Regent's-row, being the towing-path of Regent's-canal, of 70 feet.—Printed particulars and conditions of sale may be had (gratis) of G. R. BURN, Esq. Solicitor, 14, Great Carter-lane, Doctors'-commons; of Messrs. CROSLEY & BURN, Solicitors, 34, Lombard-street; at the Mart; at the "Lee Arms," Brownlow-road; "The Sisters," Pownall-road; and of the Auctioneer, 142, Bishopsgate-street Without, four doors from Sun-street, City.

FREEHOLD WATERSIDE PROPERTY, close to London Bridge, Red Bull Wharf, 93, Upper Thames-street.

MESSRS. WILSON & SCOBLE are favoured with instructions from the Proprietor to SUBMIT to Public COMPETITION, at the MART, on WEDNESDAY, JULY 17, at ONE o'clock (unless previously disposed of by private contract), this highly valuable and important PROPERTY; comprising landing and storing warehouses, four-story warehouse, counting-houses, substantially-built dwelling-house, containing numerous rooms and offices, and cellars, with a frontage to the river Thames of upwards of 60 feet, and a paved carriage way to Thames-street; the whole occupying a superficial area of upwards of 10,000 feet. The position of this property, with its present advantages alone, entitle it to rank as an investment among the first in the City; but with these there is the prospect of the Charing-cross Extension Line of Rail passing in its immediate vicinity, and the Thames Embankment Scheme; both of which must materially enhance its value, and combine to render it one of the most lucrative investments in London.—Particulars, with plans, may be obtained of Messrs. HAYES, TWISDEN, PARKER, & CO. Solicitors, 60, Russell-square; Messrs. JOHN BROWN & SON, and J. H. STANTON, Esq. Solicitors, Newcastle-upon-Tyne; at the Mart; and, with cards to view, of the Auctioneers, 114, Leadenhall-street, E.C.

STOCKWELL, SURREY.—Contiguous to the Clapham-road.—Important Sale of Valuable Building Ground.

MR. BRAY, Jun., is favoured with instructions to SELL at the MART, on WEDNESDAY, the 10th July, at TWELVE o'clock, in 23 lots, a VALUABLE ESTATE, comprising about five acres of eligible building-ground, contiguous to the Swan Tavern, Clapham-road, having 337 feet of building frontages to Stockwell-place, 368 feet to St. Michael's-road, 475 feet to Burnley-road, and 120 feet to St. Martin's-road, and presenting sites in this highly-favoured locality for the erection of detached or semi-detached villas, with ample depths allotted for garden ground. The roads and sewers have been made at a considerable expense, and the water-mains have been laid by the Lambeth Water Company, who have agreed to supply builders, free of charge, until the houses are occupied. Omnibuses pass the Swan (close to the estate), to and from the City and West End continually throughout the day.—Particulars and conditions of sale, with a plan of the estate, may be had of Messrs. ANDREW ATKINS & IRVINE, 5, White Hart-court, Lombard-street, Solicitors for the Vendors; at the Swan, Stockwell; at the Castle, Lower Tooting; of Mr. NASH, Builder, Balham-hill; at the White Hart, Streatham; at the Mart; and at the Offices of the Auctioneer, 16A, King's-road, Bedford-row, W.C.

FREEHOLD BUILDING GROUND AT LIMEHOUSE.

MR. VIGERS (late Davis & Vigers) will SELL by AUCTION, on TUESDAY, 23rd JULY, at GARRAWAY'S COFFEE HOUSE, Change-alley, Cornhill, at TWELVE for ONE o'clock, a PLOT of FREEHOLD BUILDING GROUND, at the corner of Three Colt-street, close to the Limehouse Station on the Blackwall Railway.—To be viewed. Particulars and conditions of sale to be had of Messrs. J. & C. ROGERS, Solicitors, Manchester-buildings, Westminster; at Garraway's; and the Estate Exchange, Change-alley, Cornhill; and at the Auctioneer's Offices, 3, Frederick's-place, Old Jewry, E.C.

By order of the Mortgagees.—To SMALL CAPITALISTS.—Nos. 8 to 14 NEW-STREET, ST. LUKE'S.

MR. W. F. HAMMOND is instructed to SELL by AUCTION, at the MART, on WEDNESDAY, JULY 10, at TWELVE for ONE, the above capital LEASEHOLD INVESTMENT, held for a term of about seven years, at a ground rent of 80*l.* and producing a total rental of 171*l.* 12*s.*—Particulars to be had of Messrs. M'LEOD & CANN, Solicitors, 51, Lincoln's-inn-fields; at the Mart; and at the Auction and Survey Offices, 3, Carey-street, opposite Lincoln's-inn-gate, W.C.

FREEHOLD INVESTMENT, No. 6, RED LION PASSAGE, RED LION STREET, HOLBORN.

MR. W. F. HAMMOND is instructed to SELL by AUCTION, at the MART, on WEDNESDAY, JULY 10th, at TWELVE for ONE, the above capital safe FREEHOLD INVESTMENT: comprising a double-fronted House and Shop, let to a respectable tenant of 50*l.* per annum, paying rates and taxes.—Particulars to be had of Messrs. WATSON & SON, Solicitors, 12, Bouverie-street, Whitefriars; at the Mart; and at the Auction and Survey Offices, 3, Carey-street, opposite Lincoln's-inn-gateway, W.C.

By order of the Mortgagee.—Improved Ground-rent, 12, Edward-square, Caledonian-road.

MR. W. F. HAMMOND is instructed to SELL by AUCTION, at the MART, on WEDNESDAY, JULY 10, at TWELVE for ONE, the above IMPROVED GROUND-RENT of 10*l.* per annum, subject to 2*l.* per annum. Lease about 82 years.—Particulars to be had of E. HOUNSELL, Esq. 8, Furnival's-Inn; at the Mart; and at the Auction and Survey Offices, 3, Carey-street, W.C.

By order of the Mortgagee.—Nos. 1 to 5, and 11, 15, 16, 17, 18, Edward-square, Caledonian-road, Islington.—To Small Capitalists.—Part of the Money on 1 to 5 can remain on Mortgage.

MR. W. F. HAMMOND is instructed to SELL by AUCTION, at the MART, on WEDNESDAY, JULY 10, at TWELVE for ONE, in separate lots, the TEN LEASEHOLD HOUSES, held at ground-rents varying from 2*l.* to 10*l.* each, Nos. 1 to 5 for a term of 51, and Nos. 11, 15, 16, 17, 18, for a term of 79 years, and producing a total rental of 218*l.*—Particulars to be had of E. HOUNSELL, Esq. Solicitor, 8, Furnival's-Inn; at the Mart; and at the Auction and Survey Offices, 3, Carey-street, Lincoln's-Inn, W.C.

CHARING CROSS RAILWAY.—FIFTH CLEARANCE SALE. BUILDING MATERIALS.

MR. MARSH, in conjunction with Messrs. WILLIS & HARROW, is instructed by the Directors, to SELL by AUCTION, on the PREMISES, on MONDAY, JULY 8, at ONE o'clock punctually, the valuable BUILDING MATERIALS of Twenty-three Houses, situate in Waterloo-road, John-street, Cornwall-road, Windmill-street, Sea Lion-place, Eaton-street, Mitre-place, and Broad-walk, Lambeth: comprising sound stock brickwork, tiles, slates, timber in roofs, floors, sashes and frames, plate-glass shop fronts, doors, lead in gutters, fixtures, and fittings.—May be viewed the Saturday previous to sale, and catalogues had of Mr. MARSH, Charlotte-row, Mansion House; of Messrs. WILLIS & HARROW, West Molesey, Kingston, Surrey, and Alton, Hants.; and of Mr. EDWARD RYDE, Surveyor to the Company, at his Offices, in the South-Eastern Railway Terminus, London-bridge.

KINGSTON-UPON-THAMES, between the Town and Railway Station at Surbiton.—Valuable Freehold Building Estate, Land Tax redeemed.

MESSRS. EDWIN FOX & BOUSFIELD are favoured with instructions to SELL by AUCTION, at the MART, on WEDNESDAY, JULY 17, at TWELVE, in three lots, an important FREEHOLD ESTATE: comprising 11 acres of valuable Building Land (now occupied as accommodation meadow and garden ground, with the Cottages thereon), advantageously situate, abutting upon Grove-road, close to the important market town of Kingston-upon-Thames, and contiguous to the favourite residential district of Surbiton, within half a mile of the Railway Station, and in a position to which the building operations of both places have already extended, affording, in connection with the plans about to be developed on adjoining estates, facilities for the erection of numerous houses of an appropriate class, and possessing, from its proximity to the rail, the river, and the town, advantages of location tending to confer on the spot an undoubted pre-eminence.—May be viewed, and particulars with plans, had shortly of Mr. W. RANYARD, Solicitor, 34, Great Coram-street, Brunswick-square; at the Mart; and at Messrs. EDWIN FOX & BOUSFIELD'S Office, 41, Coleman-street, E.C.

TO ENGINEERS, Iron Dealers, Builders, Timber Merchants, Persons Repairing, Carpenters, Packing-case Makers, Pianoforte Makers, Chair Makers, Mangle Makers, Undertakers, Fixture Dealers, and Others.—TO BE SOLD by AUCTION, by

MESSRS. F. HALL & SON, on TUESDAY next, JULY 9, 1861, at ONE o'clock, on the PREMISES, Regent-street, Westminster, an extensive Assortment of BUILDING MATERIALS, new Deals and Flooring, Birch and Beech Planks, &c.; comprising about 300 squares of 1 inch, ¾, and ½ prepared new yellow and white flooring; 2,000 yellow, pine, and white deals; 500 planks and deals cut into boards, various; large quantity of long battens, 500 long scaffold-poles, from 21 to 50 feet long; scaffold-boards, 10,000 feet of stout quartering, 5,000 feet of panel-boards, 50 pairs nearly new modern sashes and frames, large variety of capital room and other doors, cupboard fronts, shop fronts, shutters, wainscoting, stoves, ranges, chimneypieces, small wrought-iron boilers, and quantity of boiler-plates and furnace-work; ornamental iron balconets and window-guards, iron stable-racks and mangers, stable doors, coach-house gates, quantity of useful iron, 30 stacks of firewood, large quantity of stone-paving, slate slabs, new laths, carpenter's work-benches, builders' implements, iron columns, 1,000 feet of capital dry Honduras mahogany, 5,000 feet of dry birch in boards and planks, sound beech planks, Christiana white deals, new oak posts, iron gates, and other effects too numerous to mention. Without Reserve.—N.B. Approved bills at two months.—May be viewed; and catalogues had on the Premises; and of the Auctioneers, Kennington, S.

SIR JOHN SOANE'S MUSEUM.—Notice is hereby given, that in conformity with the Act of Parliament relating to the establishment of Sir John Soane's Museum, No. 13, Lincoln's-inn-fields, the Museum will be OPEN every THURSDAY and FRIDAY, during the Month of JULY, from TEN o'clock, a.m. to FOUR o'clock p.m. for which cards of admission may be obtained at the Museum.

GEORGE HOBSON, Curator *pro tem.*

POLYTECHNIC.—Every Novelty in Science, Art, or Amusement, will be brought before the public as they occur. The New Comet—Why were we not prepared for it? What is a Comet? Explication of the Train of a Comet. Mr. George Buckland's humorous entertainment — Master Arlidge, the youthful flautist—and the other entertainments as usual. Open morning and evening.

JOHN S. PHENE, Managing Director.

Polytechnic Institution (Limited), 309, Regent-street.

MR. W. S. WOODIN'S NEW ENTERTAINMENT, the CABINET of CURIOSITIES, POLYGRAPHIC HALL, King William-street, Charing-cross, every EVENING (except Saturday) at EIGHT. Private Boxes, 1*l.* 1*s.*; Stalls and Box Stalls, 3*s.*; Area, 2*s.*; Amphitheatre, 1*s.* A plan of the stalls may be seen, and seats secured (without extra charge) at the Box-office, from TEN till FOUR. Morning performance, Saturday, July 6, at Three.

TO INVENTORS. — THE GENERAL PATENT COMPANY (LIMITED), 71, Fleet-street, London, E.C. undertakes to obtain PATENTS for INVENTIONS and REGISTRATIONS for DESIGNS at most moderate charges. Unusual facilities afforded to Inventors. Printed information gratis on application to ROBERT M. LATHAM, Secretary.

LONDON:—Printed by CHARLES WYMAN, Printer, at the Printing Office of COX & WYMAN, Nos. 74 and 75, Great Queen-Street, Lincoln's-inn-fields, in the Parish of St. Giles-in-the-fields; and published by the said CHARLES WYMAN, at the Office of "THE BUILDER," No. 1, York-street, in the Parish of St. Paul, Covent-garden, both in the County of Middlesex.—Saturday, July 6, 1861.